CHICAGO
BRICK MACHINERY COMPANY
CHICAGO. U. S. A.

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Chicago Brick Machinery Co.

John J. Moroney

President

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

2825 West Harrison Street

Long Distance Telephone
Garfield 5771

CHICAGO

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Introductory

THERE are, as it is well known, three distinct systems of making brick from clay or shale, besides the new methods of making brick from sand. These three systems are known as the *dry press*, the *stiff clay* and the *soft clay* processes, and each requires a different outfit of machinery throughout. The system to be used in any particular case depends on the nature of the clay, the kind of brick desired and the market; and as clays vary greatly in their nature, different materials often require quite different treatment, even where the same general process is used.

From the above, it will readily be seen that it is a difficult matter to quote prices on any brick-making outfit without knowing the clay to be used and the kind of brick to be made, as well as the capacity desired. Where parties are not sufficiently familiar with brick-making to know what system is best adapted to their materials, and the kind of clay preparing machinery needed, it is always best to send us half a pound to a pound of clay by mail or express, prepaid, with particulars as to the kind and quantity of brick desired. This will enable us to quote prices intelligently on the outfit best adapted to the materials and conditions.

We have the most modern machinery for all three systems of brick-making, and during the past thirty years that we have been identified with the clay working trade, we have constructed many of the up-to-date plants in this country. It has always been our aim to give the customer the machine as it is represented. In following this policy, we have made friends, and we believe it well fitting to say we are always welcome on any yard where we have installed equipment.

To those who intend to start in the manufacture of clay products, but are in doubt as to their material, proper lay-out and machinery requirements, we offer the assistance of our Engineering Department. We are prepared to send an engineer to go into your proposition thoroughly. He will make a careful examination of the proposed site, secure samples from which will be made practical tests to demonstrate the adaptability of the materials for the wear intended, and when you require, we will submit a full report of the chemical and physical properties.

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A SQUARE DEAL MEANS A GOOD DEAL

DRY PRESS BRICK MACHINERY

THE BERG BRICK PRESS

FULL EQUIPMENTS FOR MODERN BRICK PLANTS

Chicago Brick Machinery Company

2825 West Harrison Street

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DRY PRESS BRICK MAKING

THE DRY PRESS SYSTEM is the most modern and improved method of making high grade pressed building brick, front brick, ornamental brick and fire brick. By this system the clay is used nearly dry, ground fine and screened before going to the press, and the brick are formed automatically by the machine under immense pressure. Every brick, as it leaves the press, is absolutely perfect in form, finish and structure, with polished faces and sharp and strong edges and corners.

The Dry Press System is cleanly, economical and practically automatic, as will be seen from the cut on the following page. The clay is not handled from the time it is shoveled into the grinding machinery until the perfect brick are picked off from the front table of the press as shown in the cut. They are usually set onto special dry press trucks and taken directly to the kiln, without drying on the yard or in dryers.

It is this saving in handling and drying which makes the economy of manufacture of this system as compared with the older methods. With a modern, properly arranged plant of this kind, equipped for making 20,000 brick per ten hours, high grade pressed brick can be made and set into the kiln for burning (after the clay is at the machinery) at a cost not to exceed one dollar and fifty cents per thousand brick.

Nearly all shales, and very many clays, are adapted to this system. In fact more materials are adapted for the dry press process than any other system. Where any doubt exists a complete test should be made. After making a test of your materials, we will guarantee results, where our recommendations are followed.

This system is also adapted to *fire brick making,* and many of the largest and most modern fire brick plants in this country are using our machinery. Fire brick produced by this process are equal, and in many respects superior to the best grade of hand made fire brick. Dry Press Fire Brick are of granular structure without laminations or folds of any kind, having strong corners and edges. They are all uniform in size and texture.

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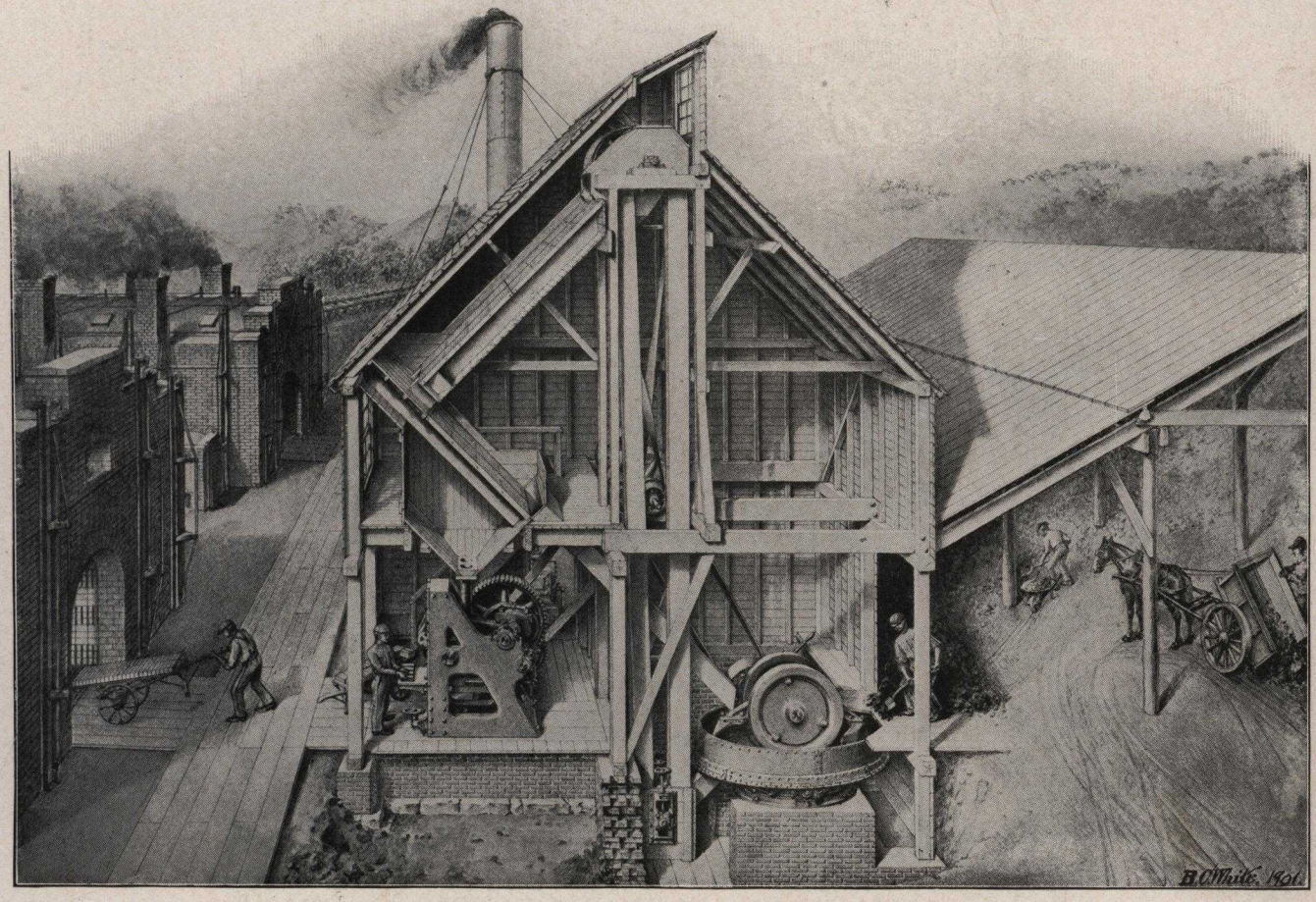

Sectional View of Dry Press Brick Plant Arranged for Working Shale

We will construct and equip a Brick Plant of any capacity desired for any responsible party, furnishing Brick Presses, Power, Kilns, Clay-preparing Machinery, Shafting, Belts, etc., and erect the necessary Buildings. We will make and burn one or more kilns of brick, and turn the Plant over to him in proper working order under guarantee of satisfactory results as to quality of product and cost per 1,000 Brick.

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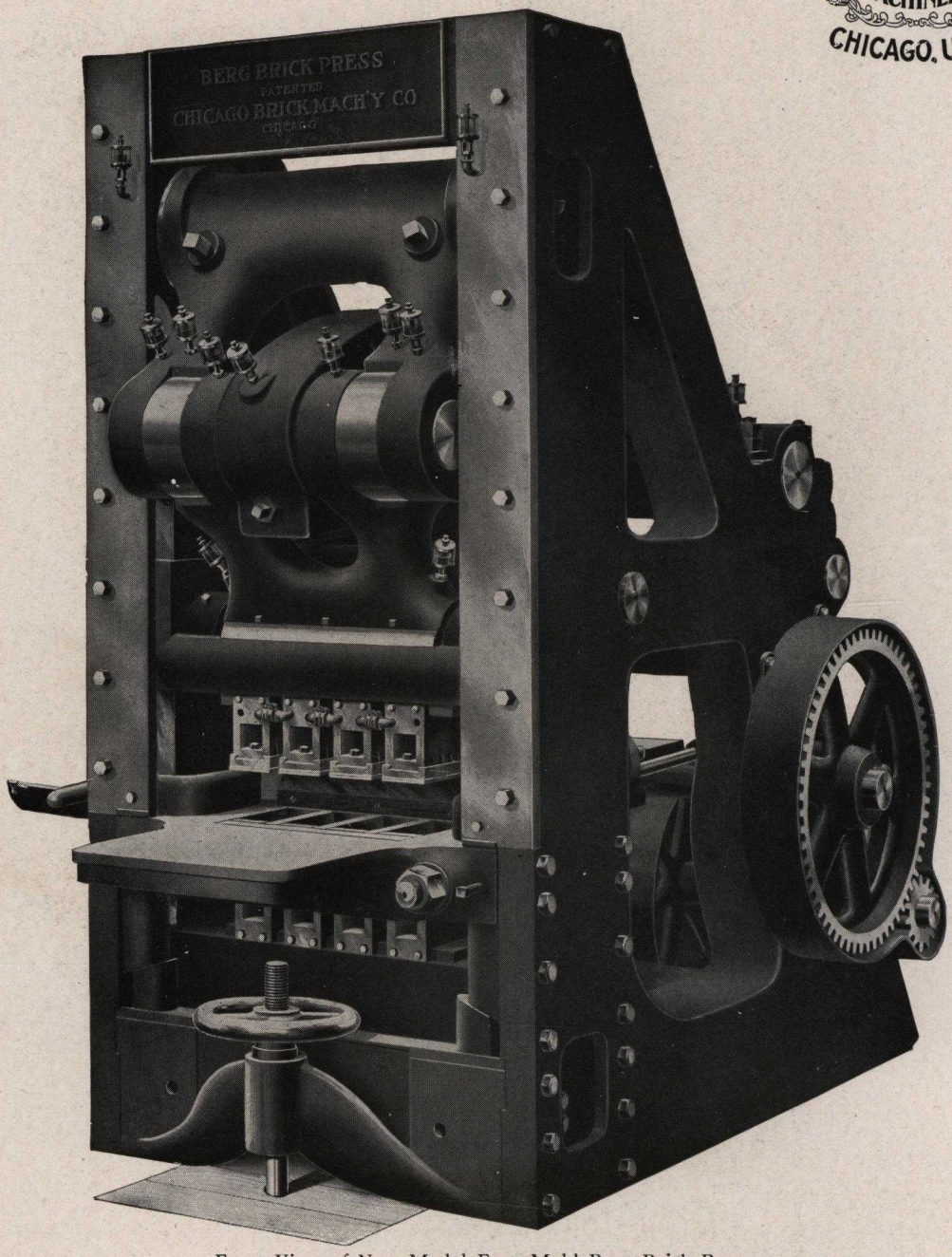

Front View of New Model Four Mold Berg Brick Press

DIMENSIONS AND CAPACITIES

4 MOLD BERG PRESS

Height	8 ft.
Length	8 ft. 2 in.
Width	5 ft. 4 in.
Pulley	30 in.x12 in.
Speed Drive Shaft	210 R. P. M.
Power	12 H. P.
Capacity	2,000 Brick Per Hour

2 MOLD BERG PRESS

Height	7 ft. 4 in.
Length	7 ft. 6 in.
Width	4 ft. 4 in.
Pulley	28 in.x9 in.
Speed of Drive Shaft	210 R. P. M.
Power	7 H. P.
Capacity	1,000 Brick Per Hour

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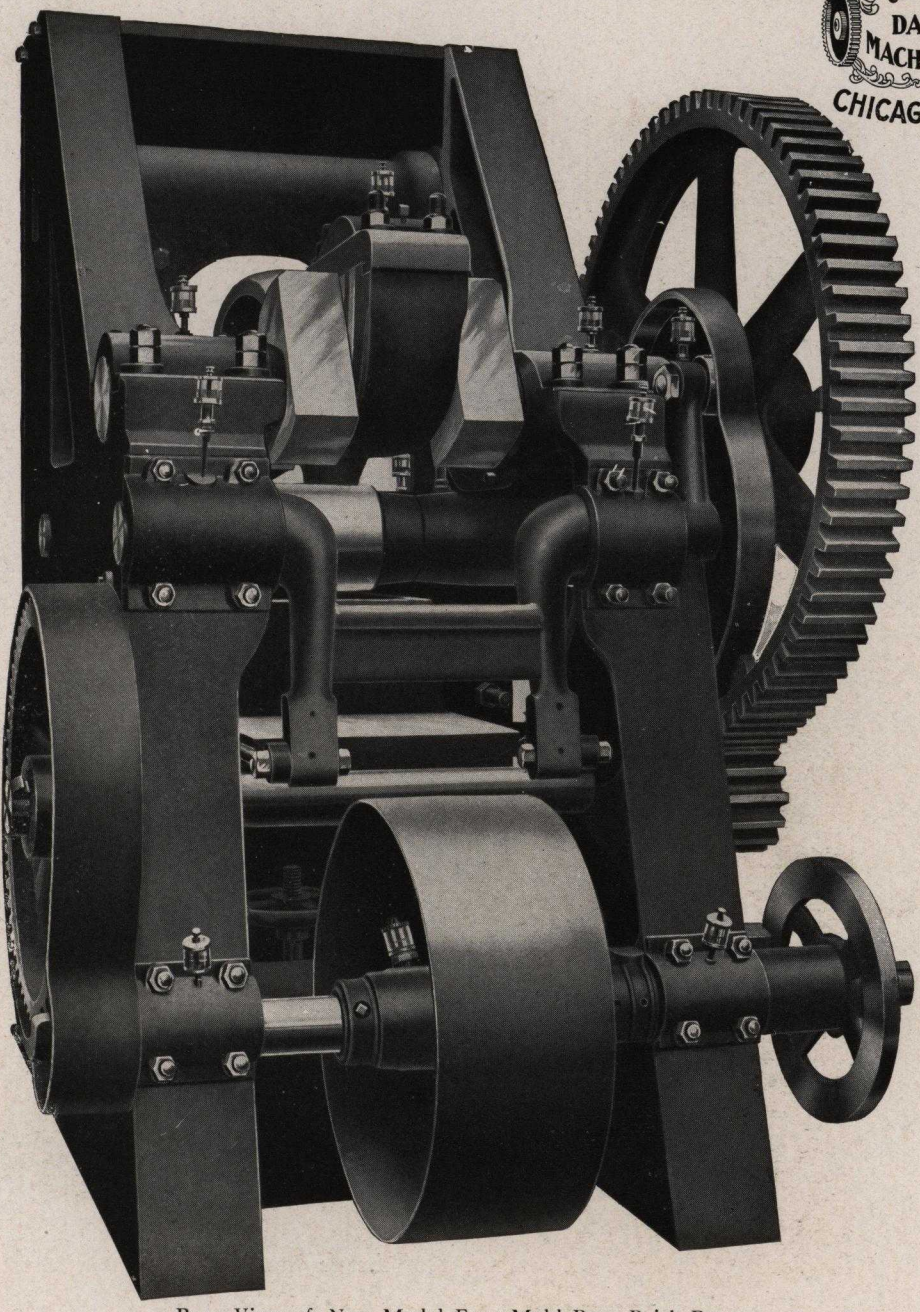

Rear View of New Model Four Mold Berg Brick Press

SPECIAL POINTS OF EXCELLENCE

Accessibility of every working part.

It will put more clay into a brick than any other press.

It is the most successful machine for sand lime brick making, and is built special for that work.

THE CHANGING OF MOLDS is quick and easy. Only one hour is required to change one mold to an ornamental shape, while all four molds can be changed in less than two hours. As this takes practically a whole day on other makes of presses, this feature is especially appreciated by the brickmaker.

ALL WORKING PARTS ARE ABOVE THE CLAY LINE. There are no bearings, journals, springs, rods, or complicated adjusting device below the mold table, to fill with fine clay and cause trouble and breakage, as on other presses. There are no hooks, wedges, latches or other unmechanical devices.

The Feeding Mechanism is so arranged that the lower plates remain up until the charger has passed entirely over them, thus *filling the molds evenly* instead of allowing the clay to roll to the front end of the mold on account of lower plates dropping too soon, making one end of the brick coarser than the other.

THE BERG BRICK PRESS

Has been before the public so long and is so familiar to the Clay Working Trade that it hardly seems to need any special commendation at this late date; its record speaks for itself. The first Berg Press was put out in 1897, and has stood at the head of the Dry Press Trade for the manufacture of high grade front building brick, and the manufacture of First Quality Fire Brick and Fire Brick Shapes. The Berg Press is powerful, durable and simple. It operates quietly and smoothly. A large number are in daily use all over the world, making perfect brick from many different materials. We will be glad to refer any intending purchaser to the nearest point where this press can be seen in operation.

GENERAL CONSTRUCTION—The main frames of the Berg Press are massive, yet simple. The pressing mechanism, consisting of side bars, crank shafts, toggle pins, is all made of hammered steel. These parts receive the entire strain in pressing the brick; no pressing strain whatever is placed on the frames, these acting only as guides for the pressing mechanism. The bearings, as will be seen from the cuts, are few and very large, and there are no working parts below the line of mold table. Steel collars are provided in the toggles, which take up the main wear. These can be renewed on the yard without sending the toggles back to the factory to be rebored. The driving pulley is placed in the rear, giving a straight pull, also making the press self-contained. Press is shipped in one piece ready for the belt.

PRESSURES—The Berg Press has three distinct pressures and an up-and-down movement of the clay in the molds. It presses first from the top, then from the bottom; then it passes the center and relieves; then comes the third pressure and the movement of the clay under pressure in the molds. The standard Berg Press, as shown in the cuts, will work any kind of clay or shale that can be made into brick by this process; producing perfect and uniform brick, with polished faces, strong edges and corners, and without granulation through the center of the brick. The upper and lower plungers, charger, front and back table are all steam heated to prevent the fine ground clay from sticking to these parts.

GUARANTEE—The Berg Press is guaranteed to have a minimum capacity of 1,000 brick per hour for the Two Mold Press; and 2,000 brick per hour for the Four Mold Press. It is also guaranteed against breakage caused by defective material or workmanship, and to turn out perfectly formed brick from any material which will make Dry Press brick; provided such material is supplied to the Press in sufficient quantity to operate to its full capacity, and in proper condition for any machine of this class.

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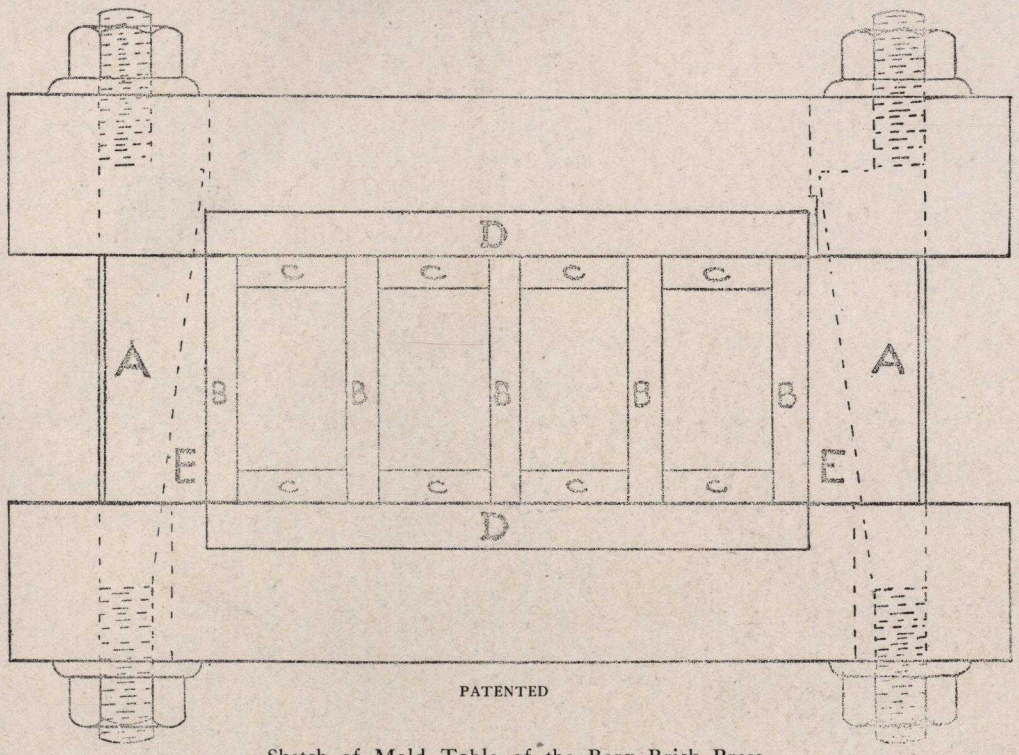
BERG MOLD BOX



Sketch of Mold Table of the Berg Brick Press

A. Wedge-shaped Bolts. B. Side Liners. C. End Liners. D. Filling-in Blocks (removed for making Roman Brick). E. Wedge Blocks.

THE MOLD BOX is really the vital point of any Dry Press. It is here that the brick are made, and it is here that simplicity, accessibility and convenience are most appreciated by the operator. The absolute simplicity of this Mold Box, and the ease of changing from one style of brick to another, can best be appreciated by seeing the machine. A few points to which we call special attention are the following:

There are *no partition plates* at all, and *no sulphur* is used to set the molds. Our *liners* are straight pieces and have two wearing faces. As the plungers and plates are adjustable to reground molds, the liners can be resurfaced and used until worn down very thin. Being made of tool steel, they are hard all the way through. The table is kept tight and molds the same size by drawing up on the wedge bolts, hence no backing out of reground liners with paper or otherwise is necessary to make them fit the mold.

To *change* the *molds* simply remove one of the large wedge bolts. This leaves the liners and entire table loose, as no screws are used in the molds. Ornamental shapes or new liners can be readily inserted, the entire process of changing all four molds taking less than two hours.

To make *Roman, Pompeian* or *Norman Brick* take out the filling-in blocks D, which gives sufficient width of table to take a Roman liner 13¼ inches long.

To make *Square Blocks* or large fire brick shapes, take out liners to get the necessary width of mold. It naturally follows that Roman Blocks or fire tile can be made by taking out both filling-in blocks and liners.

On account of the simple construction of this mold, *Ornamental Brick* are easily and cheaply made, and many shapes and sizes can be made that are impossible on other Presses. Practically the whole range of fire brick shapes can be made without change of tables.

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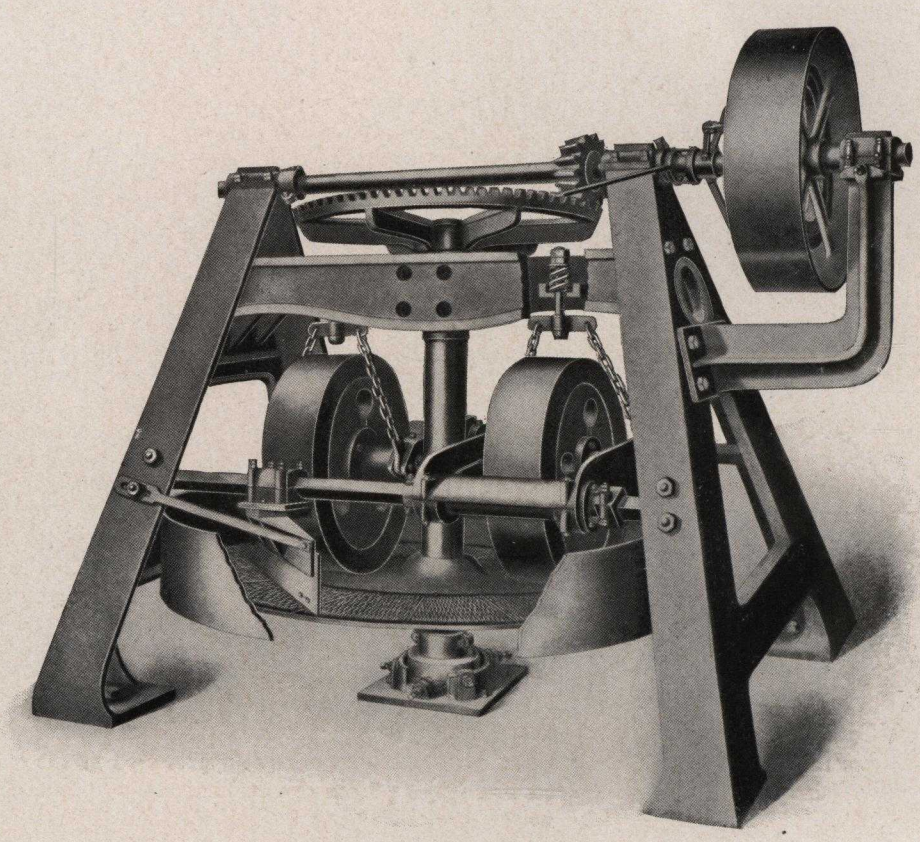

THE "EAGLE" NINE-FOOT DRY PAN

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THE FEATURES OF THE
"EAGLE" DRY PAN

THE MASSIVE FRAME—Correct distribution of the metal, the inclined "A" in connection with the heavy truss and the 3½-inch square steel shafts which support the Muller Yokes, produce a housing of unequaled stiffness. A glance at the cut will show—the picture speaks for itself.

THE STEP BEARING—The foundation of the machine. It is adjustable in all directions, also vertically, by means of two large wedge plates under the step pot. This vertical adjustment of the upright shaft permits the maintenance of the proper mesh of the driving gears without having to disturb the driving shaft bearings. The combination of a large oil reservoir with tool steel and bronze step plates makes a dependable and cool running bearing.

MULLERS SUSPENDED AND INDEPENDENT—The feature that has put the Eagle Dry Pan in a class by itself. The Mullers are firmly keyed on independent axles which revolve in long babbitted bearings in the ends of the heavy hinged yokes. This arrangement permits the raising of the Mullers over hard material independent of each other, thus being free from the tilting action and uneven wear on the tires and grinding plates common to all machines with the Mullers on the same shaft. The chain hangers with their spring cushioned support absorb the shock and jar of the Mullers incident to their rise and fall when grinding hard material. Our Mullers, having no bushing to wear out and renew, are a great saving on that account. Our Muller tires are made of special hard iron and are easily and cheaply replaced when worn.

SCREEN PLATES—Are made of hard, close-grained cast iron of any mesh desired. The screen plates and their supporting arms are planed where bolted together, thus insuring a true running screen surface. Our screening surface is large, insuring the maximum output of ground material.

FRICTION CLUTCH DRIVING PULLEY—A good clutch is an important adjunct to any machine. Our clutch is of our own design. It is very simple, has large gripping surface, and all parts subject to wear are easily renewable. The size of the friction clutch pulley on this pan is 48-in. diameter by 12½-in. face and the speed should be 140 revolutions per minute.

DRIVING SHAFT—Is large in diameter but is also supported on the driving end by a bearing on a strong bracket to overcome the side strains of the driving belt.

MOTOR DRIVE—If desired, these pans can be arranged for electric motor drive.

IN GENERAL

The weight of this dry pan is about 33,000 pounds. The metal is so correctly distributed the only parts that call for renewals are those subject to wear. This pan is the result of over 25 years' experience in building them and the proof of their merit is the fact that they are in use in nearly every state in the Union and Canada.

Our facilities for turning out these dry pans are excellent and we always have a number of them under construction so that we can ship promptly on receipt of order.

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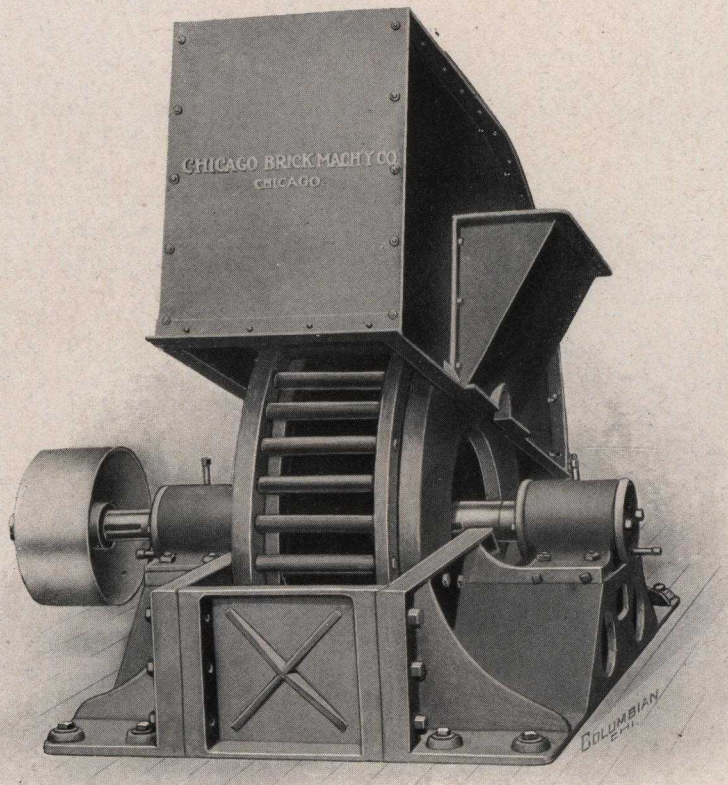
CLAY MIXER

For Dry Press Plants, to be placed directly over the Press. This machine gives a thorough mixing just before the materials reach the hopper of the Press, thus avoiding irregularities in the structure of the brick.



DIMENSIONS OF 42-INCH MILL

Height, 3 feet 9 inches.

Floor space, 5 ft. 7 in. x 5 ft. 6 in.

Speed of Drive Shaft, 600 R. P. M.

Pulley, 18x12 inches.

Weight, 4,000 pounds.

Machine Steam Jacketed when desired.

WHIPPING PULVERIZER FOR SHORT SURFACE CLAYS

This is a lighter and less expensive tool for preparing clays for Dry Pressed Brick than the usual dry pan crusher. It also takes considerably less power. It is not, however, adapted to working heavy plastic clays or any kind of hard shales. We give dimensions of our 42-inch pulverizer above.

Supplies

ON the following pages we show **Brick Yard Supplies.** Many things shown in this bulletin are not listed in any other catalogue in the **Brick Machinery Trade,** so it is well worth keeping. Put it in a convenient place and when in need of **Yard Supplies** or **Tools** refer to it and you will undoubtedly find what you are looking for. Should you require anything not shown in this bulletin, write us, and we will get it for you without charging any commission for our services.

We have better facilities for purchasing than anyone else in our line. We are located in the very heart of Chicago, the "Great Central Market," where the largest stocks in all lines are carried, including many specialties that cannot be obtained elsewhere. We frequently buy chemical apparatus, mining machinery, special tools, heavy hardware, structural iron, etc., for our customers, and are always glad to do so. We have personal friends in many lines and can always obtain favorable prices.

On account of market conditions, we do not show any prices as has been our custom in previous **supply catalogues.** Let us know what you need and we will gladly quote prices. Should you send your order in without first obtaining our prices, you may rest assured that we will bill you the lowest price at the time your order is received. Please note our slogan: **"A SQUARE DEAL MEANS A GOOD DEAL."** We aim to live up to this slogan, as we realize by so doing we will hold your continued patronage.

WHEN IN NEED OF NEW BRICK MACHINERY, LET US KNOW WHAT YOU REQUIRE AND WE WILL SEND PROPER BULLETIN.

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Bulletin No. 23

Supplies

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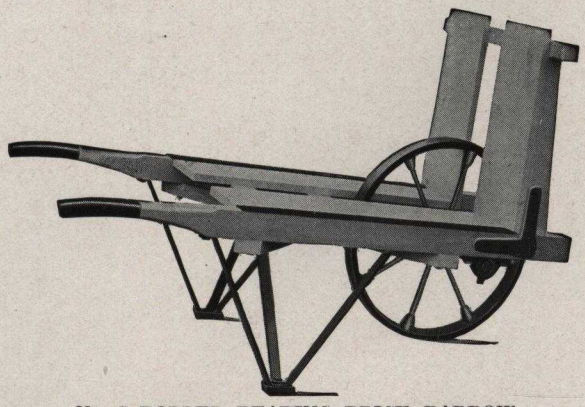
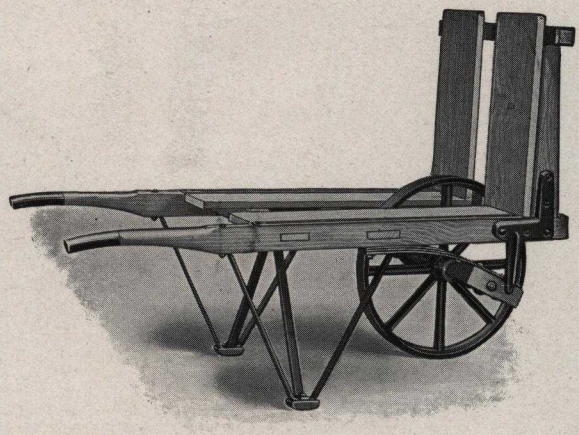
Bulletin No. 23

BRICK BARROWS



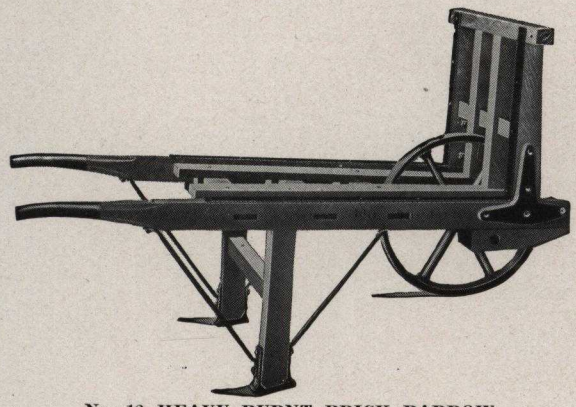
No. 7 ROLLER BEARING BRICK BARROW

This is a winner and built to stand rough usage in the yard. Will carry 20 to 30 per cent greater load than with old style bearings. Furnished with 18 in. or 20 in. wheel.



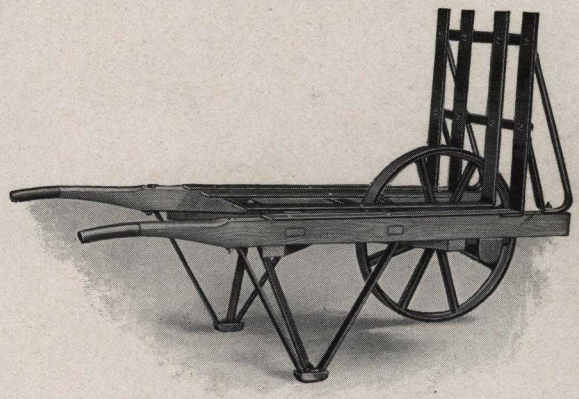
No. 1 SPRING BRICK BARROW

Furnished with regular or roller bearings. Heavy four leaf springs. Capacity, 100 brick.



No. 12 HEAVY BURNT BRICK BARROW

Frame braced underneath. Slats or bottom bolted to frame work. Handles stripped with steel. Solid cast wheel, 20 in. diameter, 1¾ in. face. Wheels shrunk on axles. (Can furnish 18 in. wheel if wanted.)

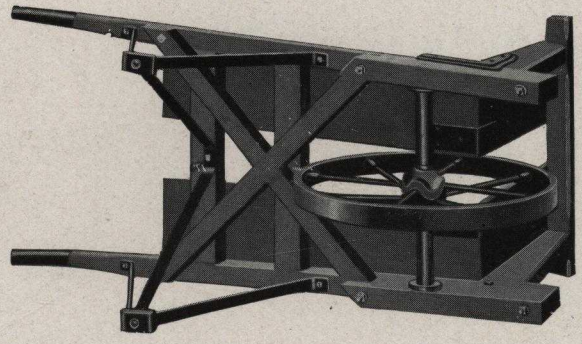


STEEL SLAT BARROW

Slats of 3/16 in. steel. Wheels, 20 in. in diameter. Made only with roller bearings.

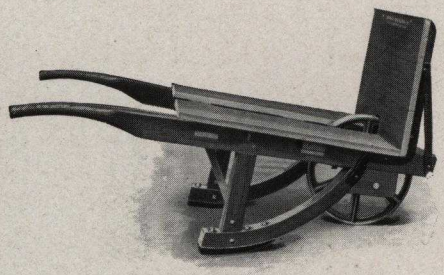
No. 4 REGULAR BRICK BARROW

Capacity, 100 standard brick. Made of seasoned oak. Bottom, 32 in. long; dash, 18 in. high; 20 in. wheels, well braced and painted.



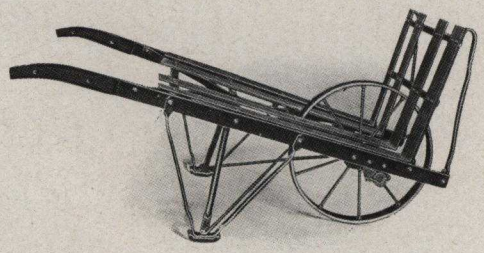
Showing solid construction and braces of No. 4 and No. 7 Barrows.

BARROWS WEIGH APPROXIMATELY 110 LBS. EACH



No. 35 Brick Barrow, air dried white oak frame, 57¼ in. long; dash, 18 in. high; bottom, 29½ in. long; one 16 in. cast wheel with heavy 1½ in. tire; axles mounted in self-oiling block bearings. This barrow is very substantially built throughout and has heavy cast iron renewable shoes.

Weight, 100 lbs.



No. 11 Metal Brick Barrow; handles, 56 in. long; dash, 18 in. high; bottom, 24 in. wide; one 20 in. wheel; 1⅜ in. axles fitted in self-oiling chilled boxes. All iron and steel construction, thoroughly made and braced; legs fitted with renewable cast iron shoes.

No. 12 Metal Barrow similar to above for handling tile.

BULL FROG BARROW

Note the wheel under the load, due to double bend in frame.

The handles are made of inch tubing bent around in front of the wheel, which permits of forward dumping.

The legs are made of angle iron, well braced and bolted to the frame.

The trays are stamped out of one piece of steel, the top edge of which is beaded.

These barrows are furnished with either three, four or six cubic feet trays of various gauges of steel, as described below.

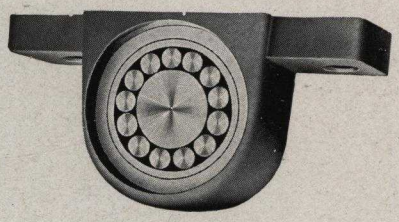
Our No. K6 "Never Break" wheel furnished on Tubular Barrows Nos. K4, K4½, K5, K7, K8 and K9.

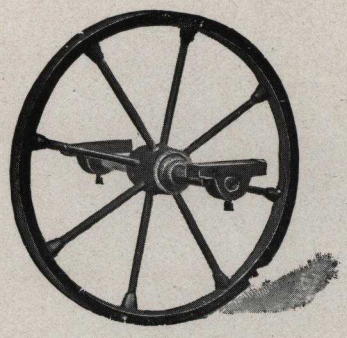
Our No. K11 "Never Break" wheel furnished on Tubular Barrows Nos. K10 and K12.

TABLE OF DIMENSIONS

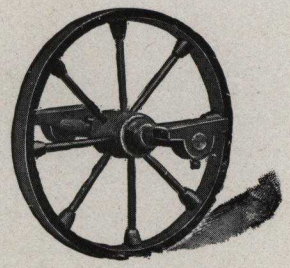
No.	Ga. Steel	L. on Top	W. on Top	D. at Wheel	D. at Handle	Capacity	Weight
K 4	15	32 -in.	28 -in.	7 -in.	5 -in.	3 cu. ft.	70
K 4½	14	32 -in.	28 -in.	7 -in.	5 -in.	3 cu. ft.	75
K 8	12	32 -in.	28 -in.	7 -in.	5 -in.	3 cu. ft.	87
K 5	15	37 -in.	29½-in.	9 -in.	6½-in.	4 cu. ft.	75
K 7	14	37 -in.	29½-in.	9 -in.	6½-in.	4 cu. ft.	83
K 9	12	37 -in.	29½-in.	9 -in.	6½-in.	4 cu. ft.	95
K12	15	42½-in.	32½-in.	11½-in.	8 -in.	6 cu. ft.	90
K10	13	42½-in.	32½-in.	11½-in.	8 -in.	6 cu. ft.	100

Roller Bearing Wheels and Axles for Brick Barrows





20-INCH WHEEL

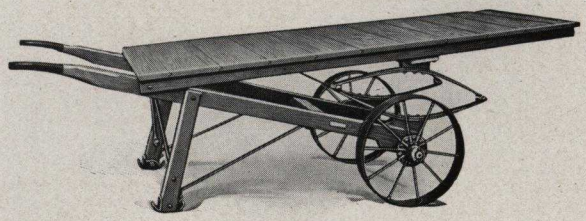


18-INCH WHEEL

Everyone knows what a great improvement "Anti-Friction" Bearings have been, and no place have they been of more value than on brick trucks and brick barrows.

We commenced with "ball bearings" but soon changed to "pin" or "roller bearings," and for three years continually improved them until we attained the perfect bearing we now furnish.

Spring Trucks for Moulds or Pallets



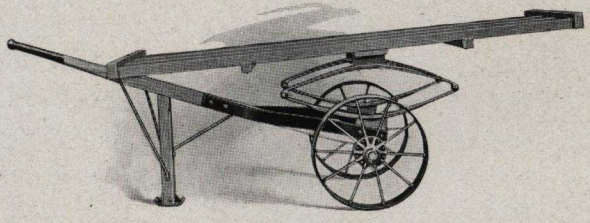
TRUCK No. 40

No. 40 Tile Truck, air dried white oak frame; handles, 64 in. x 2½ in. x 1¾ in.; platform, 30 in. x 72 in.; two 18 in. steel wheels with heavy 3 in. tires, fitted on 1⅛ in. rigid axle; two 26 in. springs support the platform; legs fitted with renewable cast iron shoes.

Weight, 155 lbs.

No. 40A Tile Truck, same as No. 40, except has one 18 in. wheel with a 2 in. tire. A fine Tile Truck.

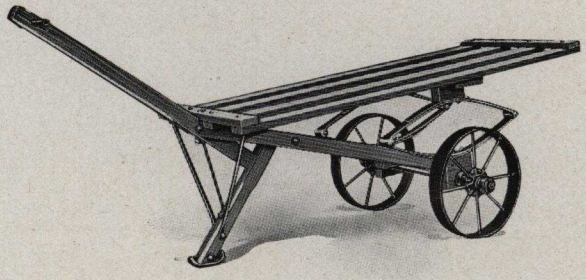
Weight, 145 lbs.



For Six Moulds or Pallets

No. 10 Spring Truck, air dried white oak frame and hickory rack; handle, 60 in. long; rack, 72 in. x 22 in.; two 18 in. steel wheels with heavy 3 in. tires; 1⅛ in. axles; two 28 in. springs support the rack. This is the strongest mould or pallet truck on the market; observe the heavy braces running from sides to handle and the square hickory bars in the rack with heads firmly bolted on. Leg fitted with renewable cast iron shoe.

Weight, 125 lbs.



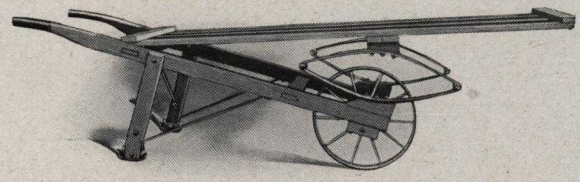
For Five or Six Moulds or Pallets

No. 6 Spring Truck, air dried white oak frame and hickory rack; rack, 72 in. x 24 in.; two 16 in. steel wheels with heavy 2½ in. tires; 1 in. axle; two 26 in. springs support the rack. Leg fitted with renewable cast iron shoe. For six moulds or pallets.

Weight, 130 lbs.

No. 5 Spring Truck, same as Truck No. 6, except has a rack 60 in. x 24 in., for five moulds or pallets.

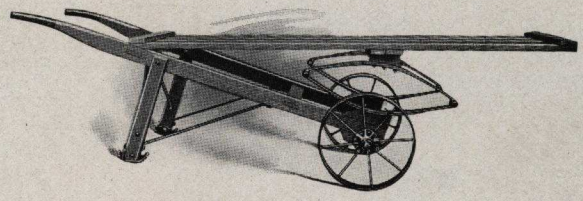
Weight, 95 lbs.



For Six Moulds or Pallets

No. 16 Spring Truck, air dried white oak frame and hickory rack; handles, 64 in. x 2½ in. x 1¾ in.; rack, 72 x 24 in.; one 18 in. steel wheel with heavy 2 in. tire; 1¼ in. axle fitted in self-oiling block bearings; two 26 in. three-leaf springs support the rack and are arranged to not only equalize the load when being wheeled but to absorb all jar also. This truck is thoroughly made and properly braced. Legs are fitted with renewable cast iron shoes.

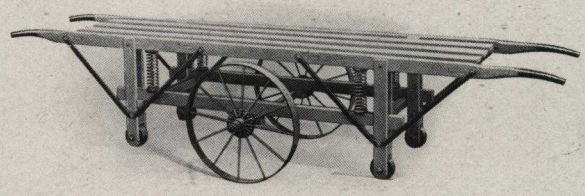
Weight, 70 lbs.



For Six Moulds or Pallets

No. 15 Spring Truck, same as No. 16, but has two 16 in. steel wheels with 2½ in. tires instead of one 18 in. wheel with 2 in. tire as on the one above. Having two wheels, this truck is easier manipulated than No. 16 but many prefer a one-wheeled truck for other reasons.

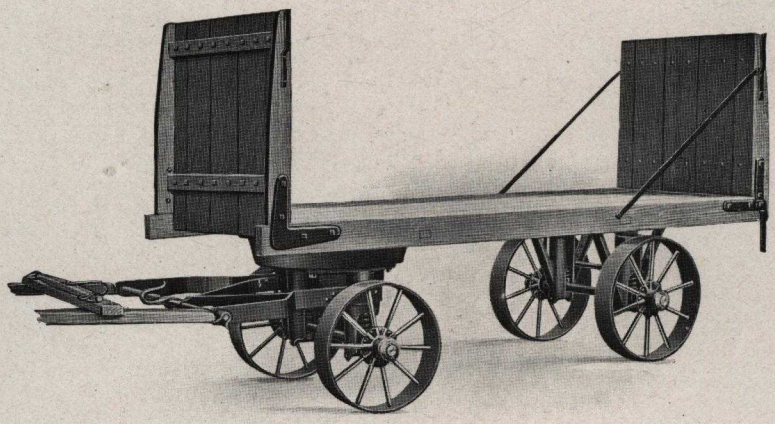
Weight, 75 lbs.



For Nine Moulds or Pallets

No. 30 Double End Mould or Pallet Spring Truck, air dried white oak; handles, 108 in. x 2½ in. x 1¾ in.; rack, 90 in. x 22 in.; four 8 in. coil springs support the rack; two 24 in. steel wheels with heavy 2 in. tires; 1⅛ in. axle; legs fitted with 4½ in. cast wheels, and braced with steel.

Weight, 195 lbs.

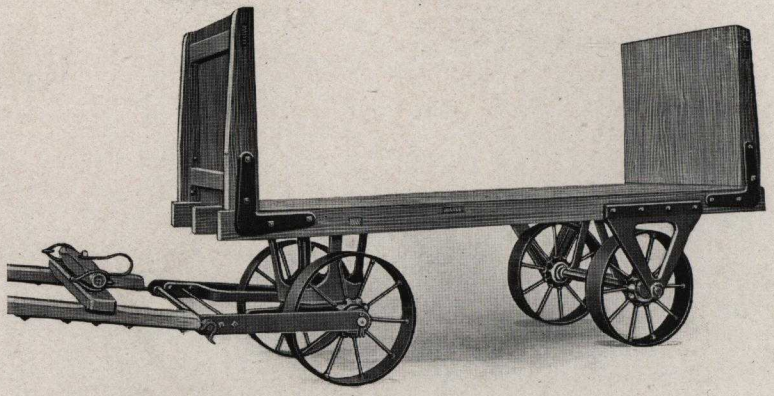


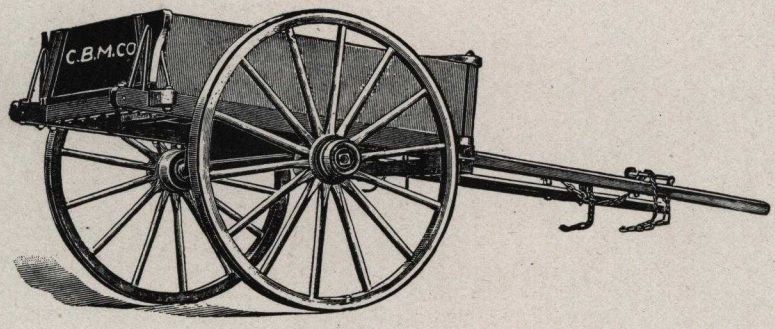
SPRING BRICK WAGON No. 55

No. 55 Spring Brick Wagon. This Spring Brick Wagon is designed to meet the requirements of customers who want a Brick Wagon on springs. The platform is 32 in. wide and 84 in. long. The ends are 27 in. high and the rear end lets down and forms a platform to stand on when loading. It will carry 1,000 ordinary sized brick at a load. The rear wheels are 20 inches in diameter, and the front ones are 18 in. All have 4 in. tire. We also build this wagon with both ends stationary.

BRICK WAGON No. 50

No. 50 Brick Wagon or Mule Truck. A strong, well made wagon for use with horse power in hauling brick. Capacity about 5,000 lbs. Dimensions, platform, 30 x 78 in. Ends, 26 inches high. Wrought iron wheels, 18 in. diameter; 4 in. tire; axle, 1½ in., square turned for wheels, thoroughly braced. When ordered with shafts, a draw bar is used similar to one shown on No. 55 Spring Brick Wagon.





HEAVY DUMP CARTS

Made especially for brickyard use. Well seasoned hardwood lumber, strong, substantial, well bolted and braced.

No. 100. Capacity, 20½ cu. ft. Weight, 900 lbs.

No. 101. Capacity, 16 cu. ft. Weight, 700 lbs.

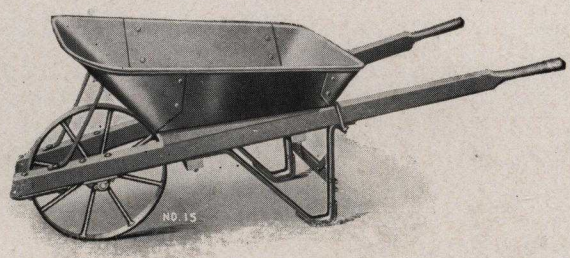
TWO-WHEELED CHARGING BARROW

No. 46

A barrow of extraordinary capacity that gives long and satisfactory service. We recommend it for all **sand-lime** brick plants.

Description:—Tray, 14-gauge steel, 30″ x 44½″ x 16″, reinforced at corners and edge with angle iron. 1½″ x $\frac{5}{16}$″ steel bars riveted along entire length and forged around nose of tray as bumpers. Tubular and bar steel frame. Wheel, 21″ diameter. Axle, 1¼″ steel. Capacity, 8 bu. coke. Weight, 266 lbs.

GENERAL PURPOSE BARROW



No. 15

Note metal wheel guard which protects the wheel and reinforces the frame; also patented handle clamp.

Description:—Tray, 16-gauge steel, mounted on hard maple frame. Channel steel legs, rigidly cross braced, with square feet and heavy shoes. Self-lubricating wheel. Capacity, 3½ cu. ft. Weight, 75 lbs.

Coal Barrows

No. 111

Description:—Tray, 14-gauge steel, 44″ long by 32″ wide over all. Depth, at front 24″, at rear 11″. Tubular steel frame. Channel steel legs with square feet and heavy shoes. Self-lubricating wheel. Patented handle clamps. Capacity, 350 lbs. Weight, 97 lbs.

No. 36

Description:—Long spout-nose tray of 14-gauge steel, 4′ long by 26″ wide over all. Depth at front, 30″, at rear 9″. Tubular steel frame. Channel steel legs with square feet and heavy shoes. Self-lubricating wheel. Patented handle clamps. Capacity, 450 lbs. coal. Weight, 106 lbs.

Barrow and Truck Wheels

CAST IRON WHEELBARROW WHEELS

We make them with flat tire 2 inches wide or half oval tire 1½ inches wide. Furnished in following diameters, 14″, 16″, 18″ and 20″.

Wheels cast on axles.

Half oval tires will be furnished unless flat tires are specified.

STEEL WHEELBARROW WHEELS

No.	Diameter Inches	No. and Size of Spokes	Size of Tire	Axle Sizes	Size of Bearings
55	16	8-⅝	⅜x1½	1⅛	¾x1¾
56	16	10-¾	⅜x2	1¼	⅞x2
57	18	10-¾	⅜x2	1¼	⅞x2
58	20	10-¾	⅜x2	1¼	⅞x2
59	22	10-¾	⅜x2	1⅜	⅞x2

REGULAR STEEL TRUCK WHEELS, CAST HUB

No.	Diameter Inches	No. and Size of Spokes	Size of Tire Inches	Hub Inches
74	16	8-⅝ in.	$\frac{5}{16}$x2½	4x$1\frac{15}{16}$
75	18	8-⅝ in.	$\frac{5}{16}$x3	4½x$1\frac{1}{16}$
76	24	12-⅝ in.	2 in. ½ oval	5x$1\frac{1}{16}$
77	24	12-¾ in.	⅜x2	5x$1\frac{9}{16}$

HEAVY TRUCK WHEELS, CAST HUB

No.	Diameter Inches	No. and Size of Spokes	Size of Tire Inches	Hub Inches
78	18	10-1 in.	⅜x4	5½x$1\frac{7}{16}$
79	20	10-1 in.	⅜x4	5½x$1\frac{7}{16}$

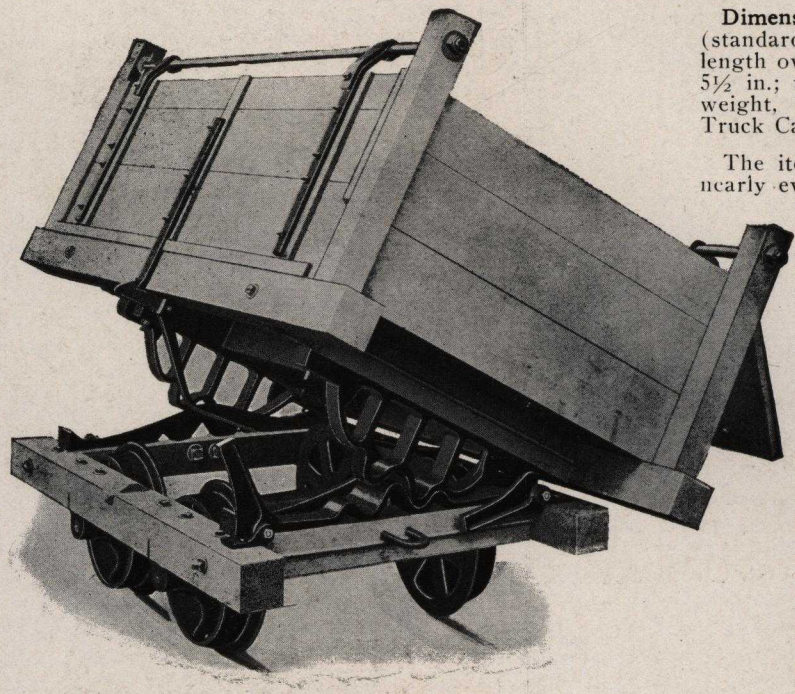
AXLES FOR TRUCK WHEELS

Ends turned. Collars shrunk on. Washer and Pin included.

No.	Diameter Inches	Journal Inches	Description
80	1	$\frac{15}{16}$	Any length up to 33″ over all
81	1⅛	$1\frac{1}{16}$	Any length up to 33″ over all
82	1¼	$1\frac{3}{16}$	Any length up to 33″ over all

Important.—Always state length of axles between bearings and length and size of bearings if other than standard, which is ⅞x2 in.

Side Dump Wood Truck Car



We can furnish **all steel** Dump Cars in various sizes and styles.

Dimensions:—1½ yard car; 36 in. gauge (standard); height from top of rail, 54 in.; length over all, 7 ft. 2 in.; width over all, 4 ft. 5½ in.; wheel base, 4 ft. 3 in. Approximate weight, Wood Truck Car, 1,250 lbs.; Steel Truck Car, 1,350 lbs.

The item of clay haulage is a big one for nearly every brick manufacturer. That economy lies with Dump Cars drawn by steam power is realized more and more and the up-to-date clay worker is installing cars to meet his requirements.

We manufacture a fine line of Dump Cars in all sizes from one to three-yard capacity, either side or bottom dump.

Our cars are very strong and heavy, made of oak and solidly braced. The sides of the cars are bolted to the corner posts so they may easily be removed when worn out without tearing the framework to pieces. The wheels are very heavy, of a correct design to give the maximum service, and of the best chilled car-wheel iron; standard size, 14 inches in diameter, 2¾-inch face; axle, 2-inch steel. The bearing boxes are of special hard babbitt or brass with oil reservoir made dust-proof.

WIRE ROPE

Write for prices, giving diameter of rope and length required.

Can also furnish any size **Sheave Wheel** for any size of cable.

Direct-Driven Winding Drum

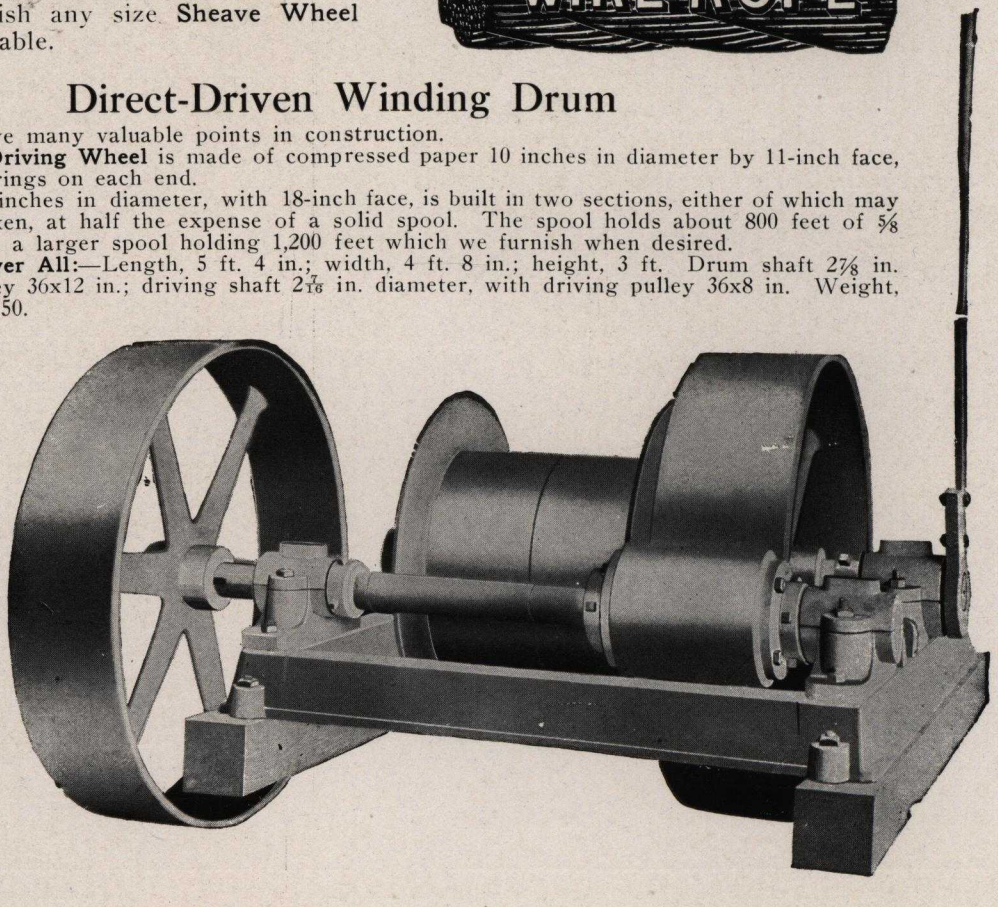
Our drums have many valuable points in construction.

The Friction Driving Wheel is made of compressed paper 10 inches in diameter by 11-inch face, with iron binding rings on each end.

The spool, 18 inches in diameter, with 18-inch face, is built in two sections, either of which may be renewed if broken, at half the expense of a solid spool. The spool holds about 800 feet of ⅝ cable, and we have a larger spool holding 1,200 feet which we furnish when desired.

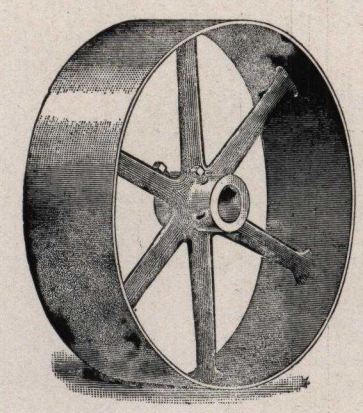
Dimensions Over All:—Length, 5 ft. 4 in.; width, 4 ft. 8 in.; height, 3 ft. Drum shaft 2⅞ in. diameter with pulley 36x12 in.; driving shaft 2 7/16 in. diameter, with driving pulley 36x8 in. Weight, 1,600 lbs. Speed, 150.

Bevel-Geared Drum of same general construction for use when track runs parallel to line shaft.



CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

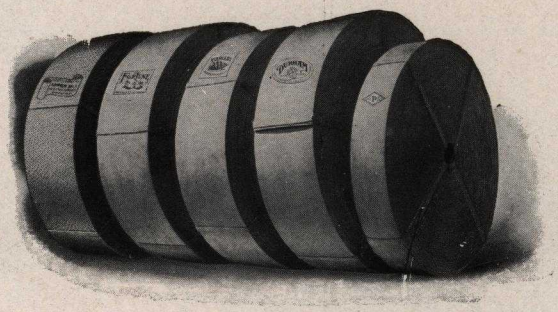
CHICAGO BRICK MACHINERY CO.



PULLEYS

All kinds and sizes, wood or iron.

Write for prices, stating diameter, face and type of pulley wanted.



BELTING

Leather, Stitched Canvas and Rubber Belting. All widths and qualities. Also **Leviathan Belt** for Conveyors and Off-Bearing Tables. Give length, width and ply, also type of belt and for what purpose wanted. Belting shipped on short notice or telegraph orders.

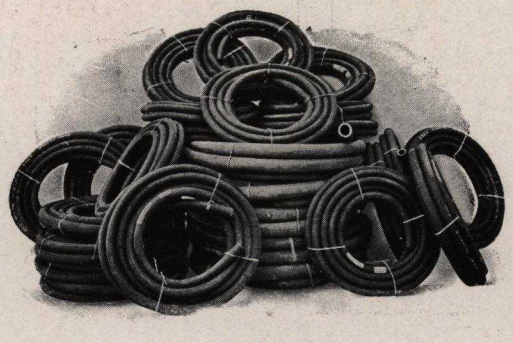
SHAFTING

COLD ROLLED STEEL

Standard Gauge and Straightened

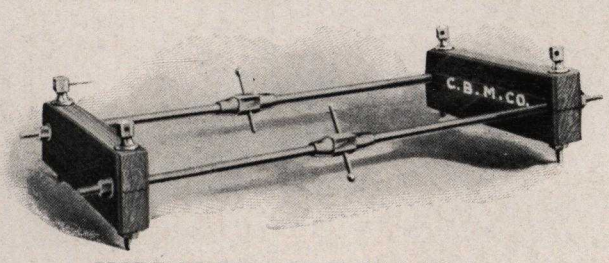
Write for prices, giving diameter and length. All sizes carried in stock here.

If Key-Seating is wanted, send sketch showing location and size of Key Seats.



HOSE

Steam, Water, Air, Suction and **Fire Hose.** Let us know size, style and length of hose.



IMPROVED BELT CLAMPS

Iron Screws

The frame is made of rock maple, and the screws of the best wrought iron, with square thread and rapid pitch. These clamps are used for putting together large belts, and are the best belt clamps made, combining simplicity, strength and convenience. Impossible for belt to slip after being placed in clamp. Every power yard should have this labor saving device.

No.	For Belt, Inches
270.....	6 to 14
271.....	12 to 18
272.....	18 to 24
273.....	24 to 36

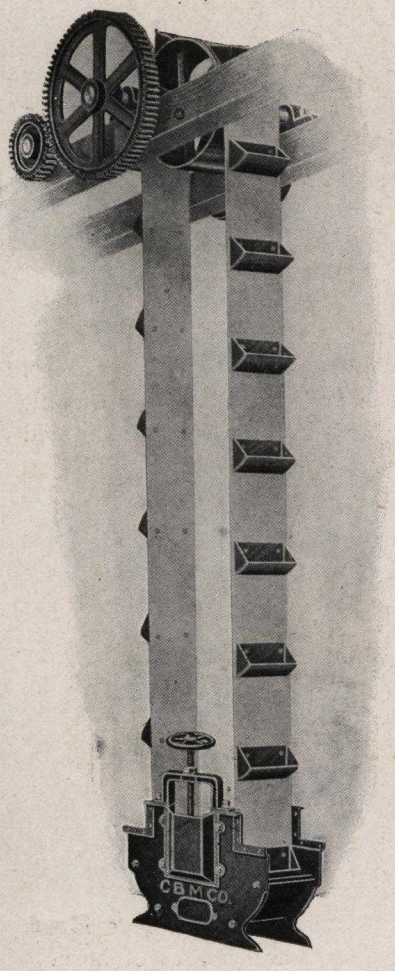
Complete Equipment —for— Boiler and Engine Room

Send for Bulletin on Oil Engine

Very frequently we receive inquiries for transmission or conveying machinery that is a little out of the ordinary, this equipment usually being hard to obtain in most localities. We have in Chicago the **largest manufacturers** of this class of machinery in the country and are in a position to **give you just what you want** on short notice. When in the market give us full details of what is required with your order and we will surprise you how quickly shipment will be made. In ordering **do not forget** to give full particulars, as this is essential to give you the service mentioned.

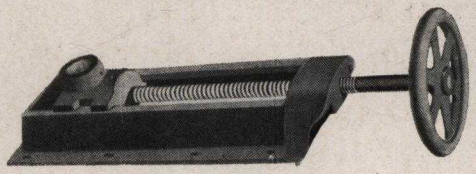
CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

BELT AND BUCKET ELEVATORS

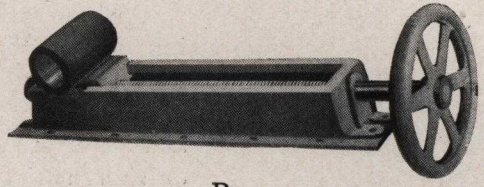


Any length Belt Elevator. Write for anything needed, giving height or length, width of belt and size of bucket desired.

TAKE-UP BOXES
For Bucket Elevators



A



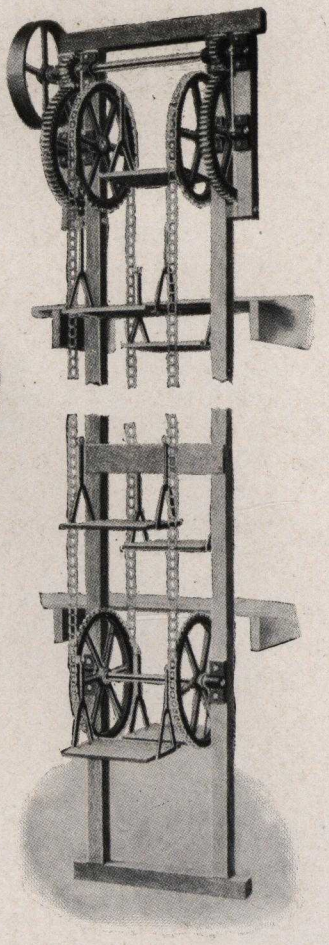
B

Write for prices, giving style wanted, whether "A" or "B," and size of shaft, also length of take-up.

ELEVATOR BUCKETS

All sizes and kinds of Elevator Buckets. Pressed steel or malleable iron. Give size wanted. Write for prices.

BRICK OR TILE ELEVATOR

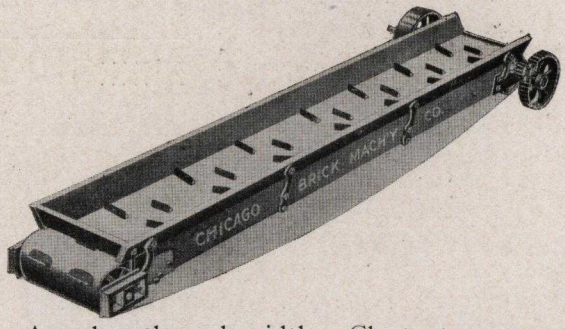


Built in any length desired to accommodate two or three floors.

Should you have any unusual conveyor or elevator problem, and you will give us full particulars of the work intended, we will gladly quote on the necessary equipment.

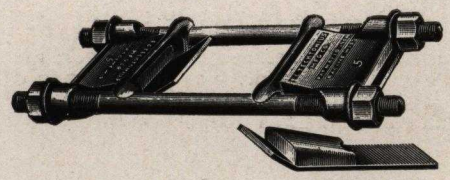
CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

WET CLAY ELEVATORS



Any length and width. Cleats to prevent clay sliding back; used only when elevator is set on steep incline. Prices on application. Give length over all and width of belt.

Kiln Fittings



THE TECKTONIUS KILN LUGS

Are made of best malleable iron throughout. They do away with rivets entirely—no holes to punch in bands—no rivets to shear or weaken the band. They never get loose and are easy to put on. The Kiln Band is inserted into the Lug, the wedge is driven in, the end of band is bent up and the Kiln Lug is ready for use. Made in the following sizes:

Medium Weight Lugs with Bolts

	Size of Bolts	Weight
3-inch	⅞ x 18	21 lbs.
4-inch	1 x 20	24 lbs.
5-inch	1 x 20	27 lbs.
6-inch, heavy	1¼ x 24	47 lbs.

Extra Heavy with Bolts

	Size of Bolts	Weight
6-inch	1½ x 24	60 lbs.
7-inch	1½ x 24	65 lbs.
8-inch	1½ x 24	70 lbs.

PLANS FOR DOWN DRAFT KILNS

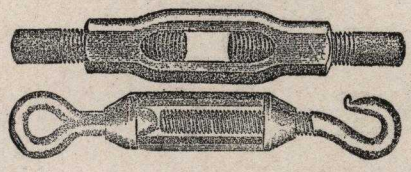
We can furnish complete plans and specifications of an improved type of **Down Draft Brick Kiln.** Plans and specifications are complete to the smallest detail.

These plans can be purchased at a very reasonable price. If you wish to save time and money and not be bothered preparing your own plans, send for full particulars.

TO OBTAIN BEST RESULTS USE A DOWN DRAFT KILN

We are prepared to furnish **complete iron work, fire brick, special tile for floors and oil burning** equipment. If interested in **oil burning** send for **Bulletin No. 22.**

Turnbuckles



All sizes—one right- and one left-hand thread. Give outside diameter of screw wanted. With or without stub-bolt ends.

KILN BANDS

Kiln Bands in stock sizes or cut to length, with holes punched for rivets and rivets furnished; with or without tighteners. Prompt shipment in any quantity. Send us your specifications.

CHICAGO BRICK MACH'Y CO. UP TO DATE MACHINERY CHICAGO. U.S.A.

COMMON GRATE BARS

Heavy Pattern

If you will give us size of your fire boxes or boiler furnaces we will quote attractive prices. SAVE MONEY by equipping your furnaces with **U. S. Rocking Grates.** Send for descriptive circular.

Length	Width	Weight	Air Space
42 in.	3 in.	50 lbs.	⅝ in.
48 in.	3 in.	60 lbs.	⅝ in.
50 in.	3 in.	62 lbs.	⅝ in.
54 in.	3 in.	68 lbs.	⅝ in.
60 in.	3 in.	85 lbs.	⅝ in.
66 in.	3½ in.	100 lbs.	⅝ in.
72 in.	3½ in.	110 lbs.	¾ in.

HERRINGBONE GRATE

Length	Width	Metal	Air Space	Weight
33 in.	6 in.	½ in.	½ in.	65 lbs.
36 in.	6 in.	½ in.	½ in.	70 lbs.
42 in.	6 in.	½ in.	½ in.	85 lbs.
48 in.	6 in.	½ in.	½ in.	100 lbs.
54 in.	6 in.	½ in.	½ in.	115 lbs.
60 in.	6 in.	½ in.	½ in.	132 lbs.
66 in.	6 in.	½ in.	½ in.	142 lbs.
72 in.	6 in.	½ in.	⅝ in.	160 lbs.

Kiln Fittings

FURNACE FRONT

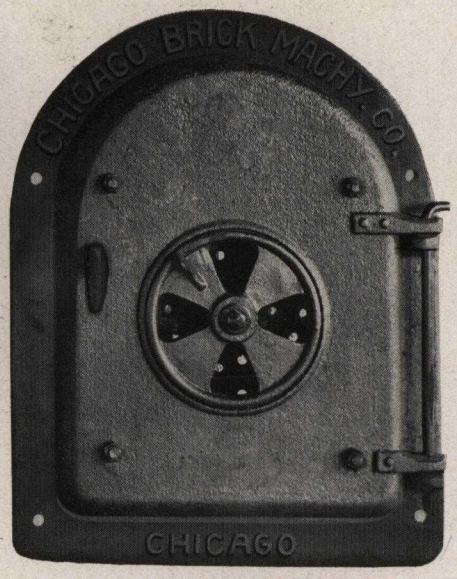
Kiln doors will save fuel enough in a short time to pay for themselves, and the fire can be controlled much better than without doors. The doors with liner plates are more durable, as the liner protects the door, and, when burned out, can be easily and cheaply renewed. The top extends back far enough to support the brick used in turning the arch. The doors are heavily ribbed to prevent warping, and have damper to admit air.

Furnace fronts. Very desirable for permanent kilns, and are intended to be used with grates. They have a circular top which extends back to support the brick used in turning the arch. The furnace door has a liner plate bolted on the inside to protect it, with about two inches space between them. It also has a damper to admit air. Bearer on inside of frame supports the front end of the grates. The ashpit doors are hung on the same frame.
No. 963. Size, fire door opening, 14x16. Size, ashpit door opening, 12x14.

KILN SHUTTER

Size, 14x16 inches, with or without bearing plate.

KILN DOOR



Kiln doors made in following sizes:

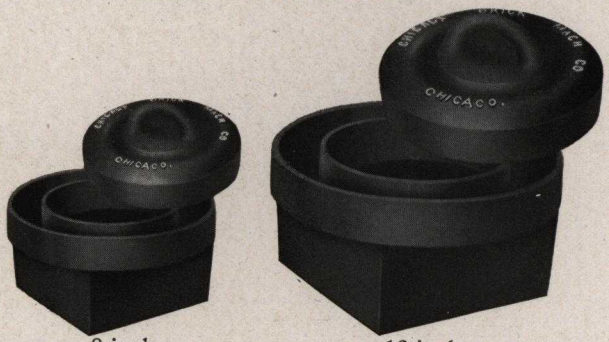
956, 12x14 oval top
957, 12x14, with liner
958, 12x14 square top
959, 13½x16 oval top
960, 13½x16, with liner
961, 15x20, with liner

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

CAST IRON KILN COVERS

Our Cast Iron Cover for the top of kilns is made with a frame which is intended to be set in the center. The inside diameter of the frame is 18 inches —large enough to admit a man. The cover has a circular damper, with opening large enough to admit of taking out test pieces. It is heavily ribbed to prevent warping. Now made to set cover in sand, air tight. No down draft kiln is complete without it. With or without liner plate.

KILN VENTILATORS



8-inch 12-inch

For down draft kilns. By placing several of them in the crown of the kiln they are very conveniently used to assist in cooling off the kiln when through burning. A cast iron ring with a groove around the edge to be filled with sand and a cover to set in the sand so that when the cover is in position no heat can escape. The cover is handled with a hook. Made in two sizes, 8 and 12-inch.

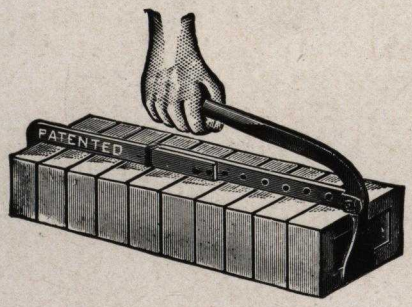
CHICAGO BRICK MACHINERY CO.

PATENT BRICK LIFTER

Pressed Brick should always be handled with a device of this kind, never tossed or dumped. All pressed brick in Chicago are handled in this way.

This Brick Lifter is made on the same principle as ice tongs. It saves one-half the cost of handling brick. Also saves sore fingers and broken brick. This Brick Lifter is forged. Both hands can be used on it when desired.

BRICK CLAMP



Made of Malleable Iron, for one hand only.

EITHER OF THESE TOOLS WILL PAY FOR ITSELF

In a few days in handling brick over the old method.

By saving twenty-five per cent time unloading a car of brick.

By not making a mistake in the count, as they can be adjusted from four paving brick to twelve regular.

By saving from 50c to $1.00 on every thousand pressed brick by not chipping edges and corners.

Especially valuable to the contractor on the job.

DON'T WAIT FOR A SWITCH ENGINE

USE THE ATLAS CAR MOVER

PERFORATED METAL

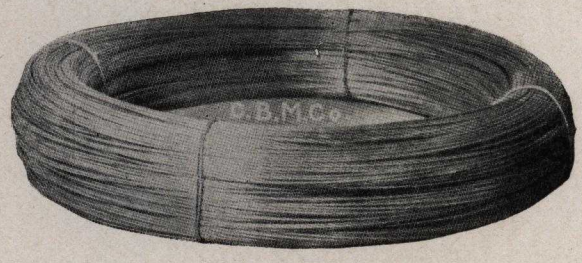
For Inclined Stationary Screens or Shaking Screens

Sheet steel, with round, straight or diagonal holes. Write for prices.

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

If you require any equipment for your yard let us know what it is and we will gladly quote prices.

BEST GRADE IMPORTED MUSIC WIRE



For Cutting Tables and for Piano Wire Screens

In ordering give gauge of wire wanted.

Try us with your next supply order – Mooney

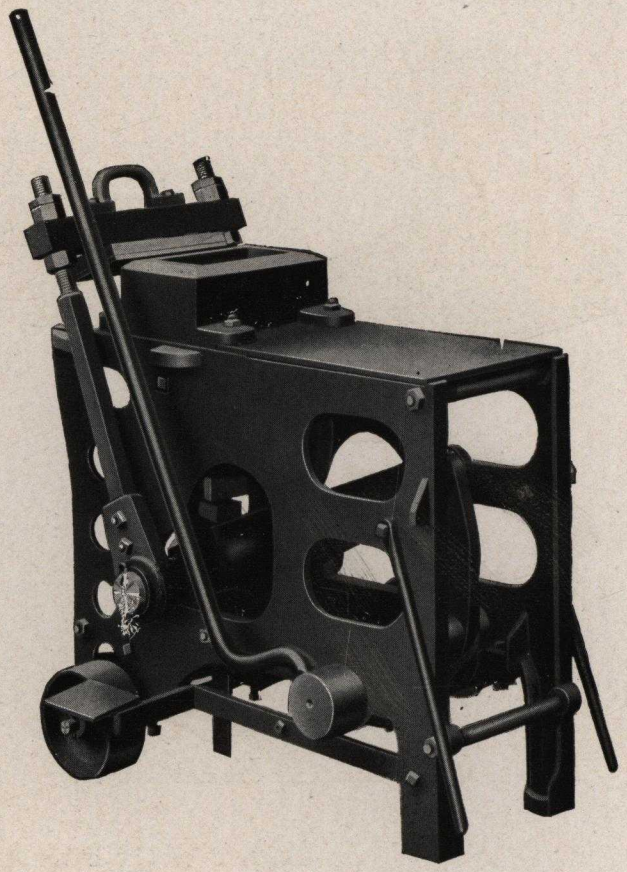
CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Hand Represses

Single Lever Represses

For Red Brick, Fire Brick and Shape Brick Work

Thickness of brick easily regulated. Capacity, 100 to 200 brick per hour, depending on size and shape of brick. Give size of green brick to be repressed and state whether soft mud or wire-cut.



SAND DRYER

For Soft Clay Yards

Sand Dryer

Put the sand in the open top of the screen. A small fire keeps the dome hot and dries the sand, which falls through opening at bottom of screen. Screen is made of perforated metal. Smoke stack not furnished. Height, 4 ft. 9 in.; diameter, 3 ft. 1 in. Weight, 1,175 lbs. Capacity, 15 to 20 cubic yards per day.

We also furnish direct heat steam power Sand Dryers of large capacity for Sand-Lime Brick Plants.

HAND MOLD

BRICK MOLDS

MACHINE MOLD

Standard sizes carried in stock. Special sizes and shapes made to order.

We are justly proud of our mold reputation, which has been gained because every mold which leaves our factory is the embodiment of good material, modern machinery and conscientious workmen combined into a perfect result.

Carefully selected air-dried lumber, special long screws, rivets in partitions, a clear cut mortise, smooth handles, panels and letters, a first-class job of iron binding, are some of the salient points.

Standard Gravity

Brick and Tile Conveyor

Chicago Brick Machinery Co.

2825 West Harrison Street

CHICAGO

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

CHICAGO BRICK MACHINERY CO.

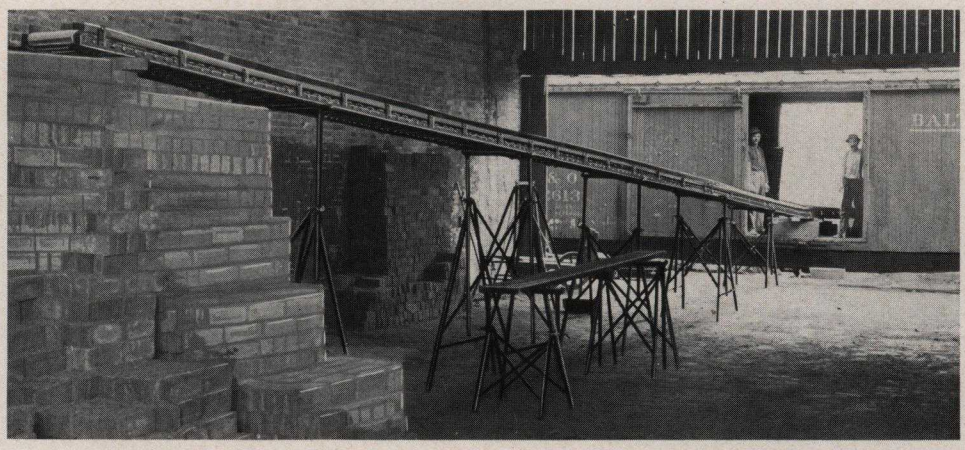
Like a fairy wand

STANDARD GRAVITY CONVEYOR EQUIPMENT

is the transformer that turns dead weight into motive energy; provides the flexible indoor transportation system that rapidly and economically moves brick and tiling out of kilns or storage; loads and unloads cars, and in a thousand ways takes the MAN-ual out of material-handling.

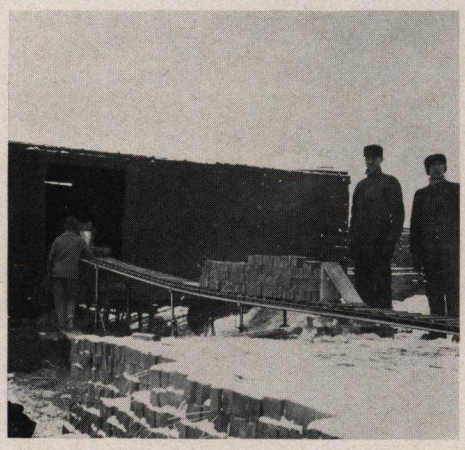
Standard brick and tile conveyors are constructed on the unit plan, thoroughly standardized both as to construction and utility.

Gravity, under the control and guidance of Standard conveyors, will revolutionize your former handling-methods, cut labor costs in half, speed up production, increase capacity, and in innumerable ways add to the pleasure and profit of doing business.



Distance is entirely eliminated by means of Standard Gravity Conveyors

Hard work becomes a pleasure with Standard Conveyor Equipment



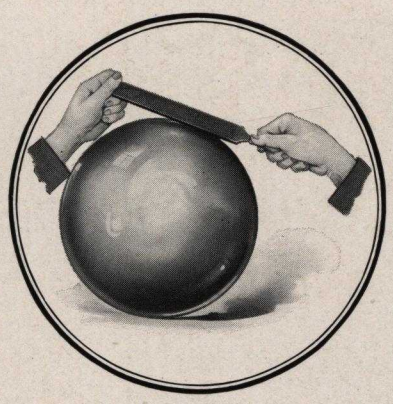
Under certain operating conditions pallets loaded with a large number of brick are used to an advantage

The handling of brick is a very difficult proposition under the old-fashioned, obsolete method of trucking or wheelbarrowing—but a very easy matter where the modern method, GRAVITY, is employed.

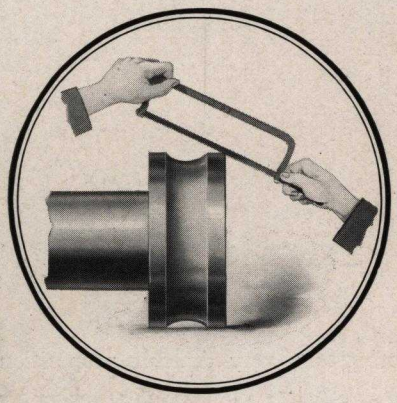
The brick are placed on the Standard conveyor, four or five abreast, according to the width of the conveyor, and friction-free move forward by gravity.

In this manner brick can be conveyed any distance, provided a uniform grade of about one-half inch fall to the linear foot of conveyor is provided.

In an endless flow brick are conveyed from the kiln to storage or directly into the cars for shipment.



You can't file them



You can't saw them

and you cannot wear out Standard ball-bearings

The world revolves around an imaginary axis and performs the feat wonderfully well, but Standard Gravity Brick Conveyors revolve on a real substantial axis—BALL-BEARINGS.

The heart of the Gravity roller conveyor is its bearing. This bearing must be exceedingly sensitive—at the same time very substantial and lasting.

Around a hardened stud shaft bearing revolve nine steel balls of the best quality obtainable.

Like an armored knight, the steel balls are encased in a high-quality, specially-prepared, double-thickness, manifold-strength steel.

The approved method of securing boiler flues in heads of locomotives is followed in the inserting of the ball-bearing cup. This high grade steel cup is inserted in the tubing under a heavy pressure until it rests against projecting indents. The roller is then placed in a large powerful beading machine, where the ends of the tubing are carefully beaded over the entire periphery of the cup.

Side frames of conveyor are constructed of 3″ x 2″ x ¼″ angle iron, braced with 1½″ x ⅜″ flat mild steel.

Standard brick conveyors are designed and constructed to furnish the brick manufacturer with a construction that will give him daily, continuous, uninterrupted service.

The purchase of the necessary sections of Standard brick conveyor to put your brick plant on a modern basis of handling is not an expenditure, but an investment that will bring back the most lucrative returns in saving of labor and increasing of production.

Furnish us with a sketch of your brick plant, showing location of kilns, storage and trackage, and we will furnish you with a layout showing the required amount of portable sections of Standard conveyor equipment to take care of your requirements. Act immediately—today.

Chicago Brick Machinery Co.

2825 West Harrison Street

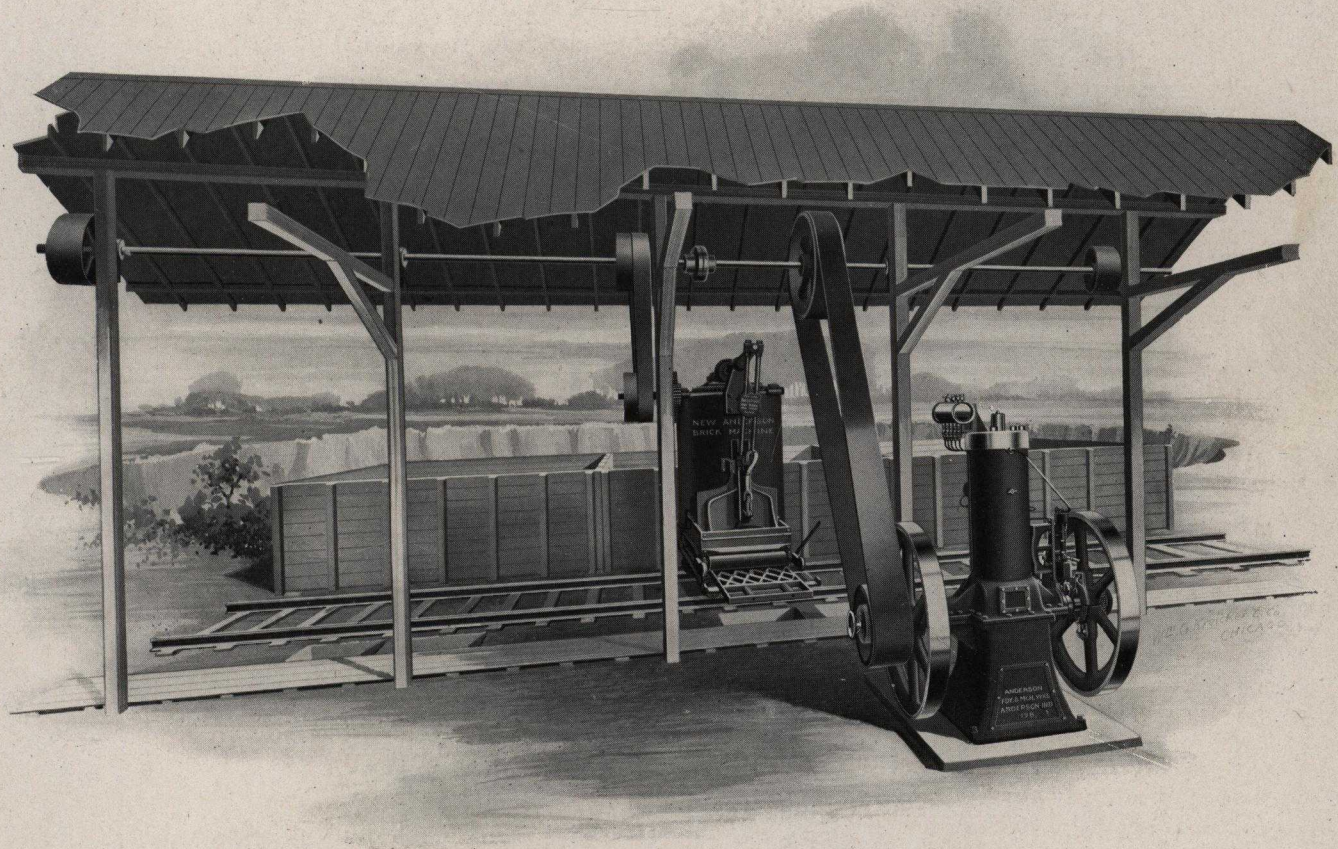
CHICAGO

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

BULLETIN NO. 25

OIL ENGINE POWER

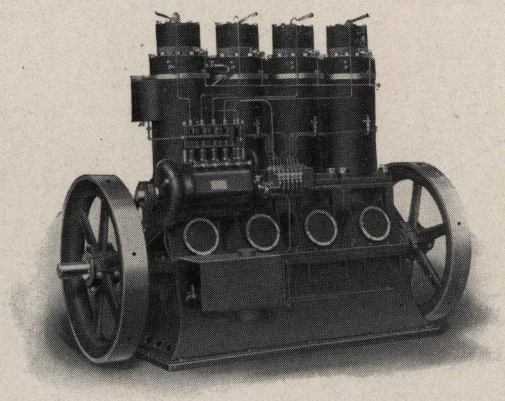
For Operating Brick Presses
15 to 300 H. P.



SOFT CLAY BRICK PLANT DRIVEN BY A 15 H. P. ANDERSON OIL ENGINE
(CAPACITY, 25,000 PER DAY)

Chicago Brick Machinery Co.

2825-29 West Harrison Street
CHICAGO, ILL., U. S. A.



Type J, 4-Cylinder 120 H. P.—Also made in 300 H. P. Type K

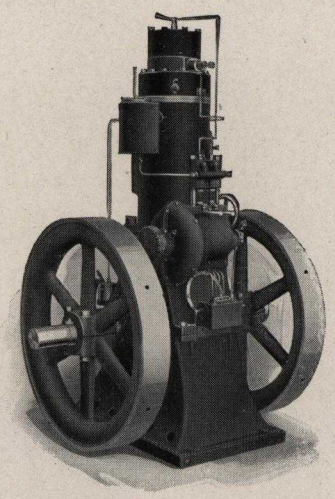
THE use of oil engines as a means of power for brick plants is rapidly gaining favor. The cut on the reverse side shows a Type L-1 Anderson Oil Engine (15 H. P.), furnishing power for a soft mud brick machine. We show this outfit to bring clearly to your view the simplicity of this arrangement. Another reason is in many localities the present demand for brick is limited, and as this outfit is the least expensive, we recommend it; especially so for the South American country with whom we are now doing considerable business.

This outfit, consisting of Anderson Oil Engine, Soft Mud Machine, molds, shafting, pulleys and belts, is all that is required when tempering the clay in soak pits. It enables the purchaser to get started making brick very quickly and on little capital.

We can furnish the outfit just as shown, or we can furnish the brick machine with our wheels and axles for a permanent setting. We also supply the brick machine with a pug mill attached, thus doing away with soak pits. In such cases a wet clay elevator can be used very nicely.

The Anderson Oil Engine operates on the valveless, two-cycle, medium compression, solid fuel injection (Semi-Diesel) principle; in which heavy fuel oil is injected into the combustion chamber near the end of the compression stroke. The charge being ignited by the heat of compression, assisted by the heat stored in the combustion chamber.

Every upward movement of the piston inhales the crankcase full of air, which is compressed (in the crankcase) by the return piston stroke until the air port is uncovered, at which time this compressed air is transferred from the crankcase to the combustion chamber (via an air passage connecting the crankcase and cylinder) on the regular two-cycle principle.



Type J, 1-Cylinder 30 H. P.

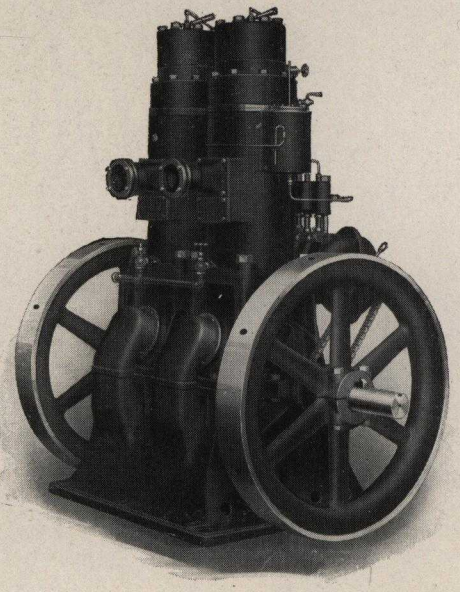
To start the engine a torch is used to heat a hollow plug screwed into the side of the combustion chamber. After the engine starts the torch is turned out; the firing plug being kept sufficiently hot thereafter by internal combustions.

This engine will operate on cheap, black, unrefined fuel oil, and use less than one pint per horse power per hour.

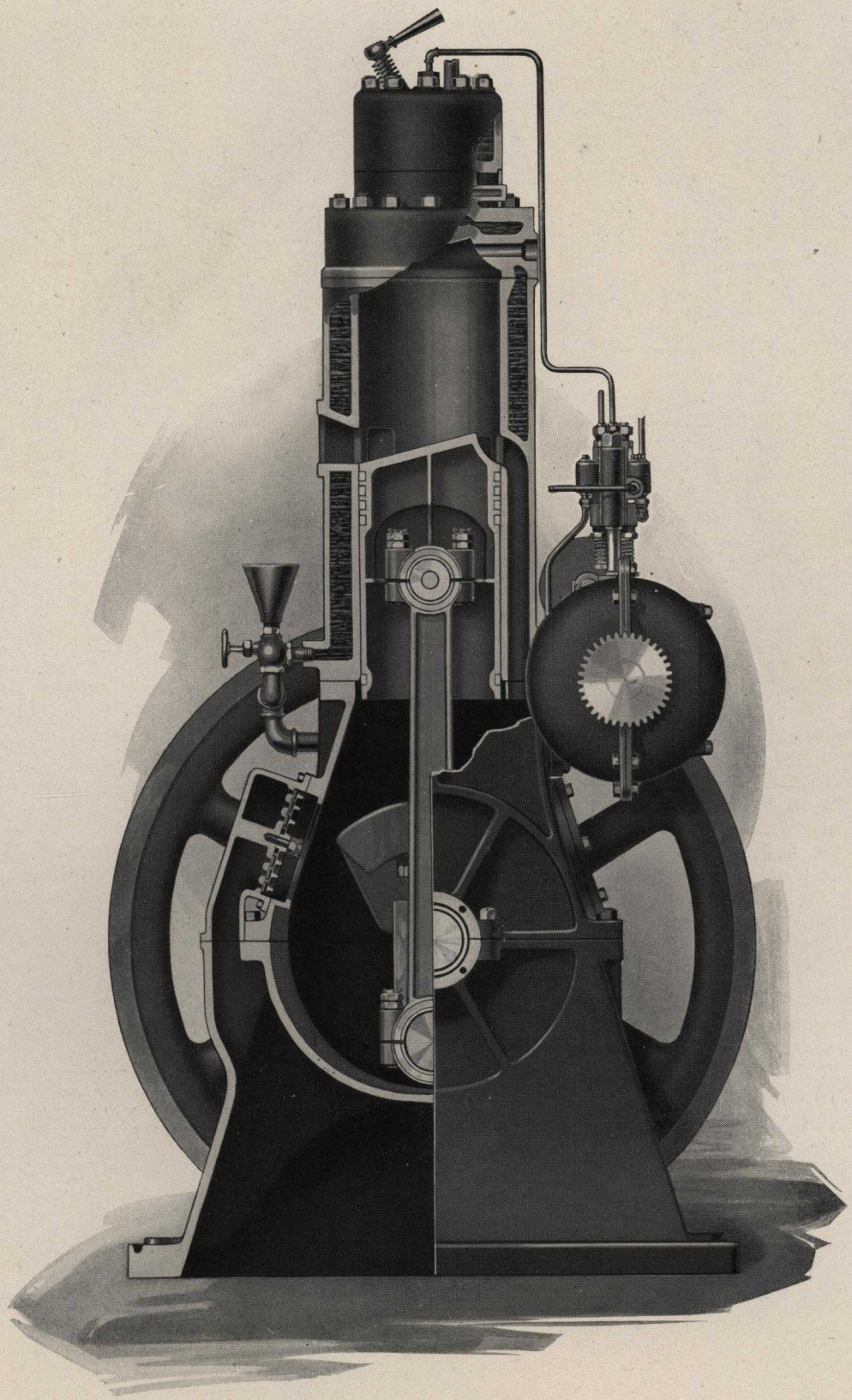
The advantages of the Anderson Engine on a brick yard over any other power are as follows:

No cost when stopped.
No waiting to get up steam.
Requires less attention.
Can be started in a few minutes.
No licensed engineer required.
It has no carburetor.

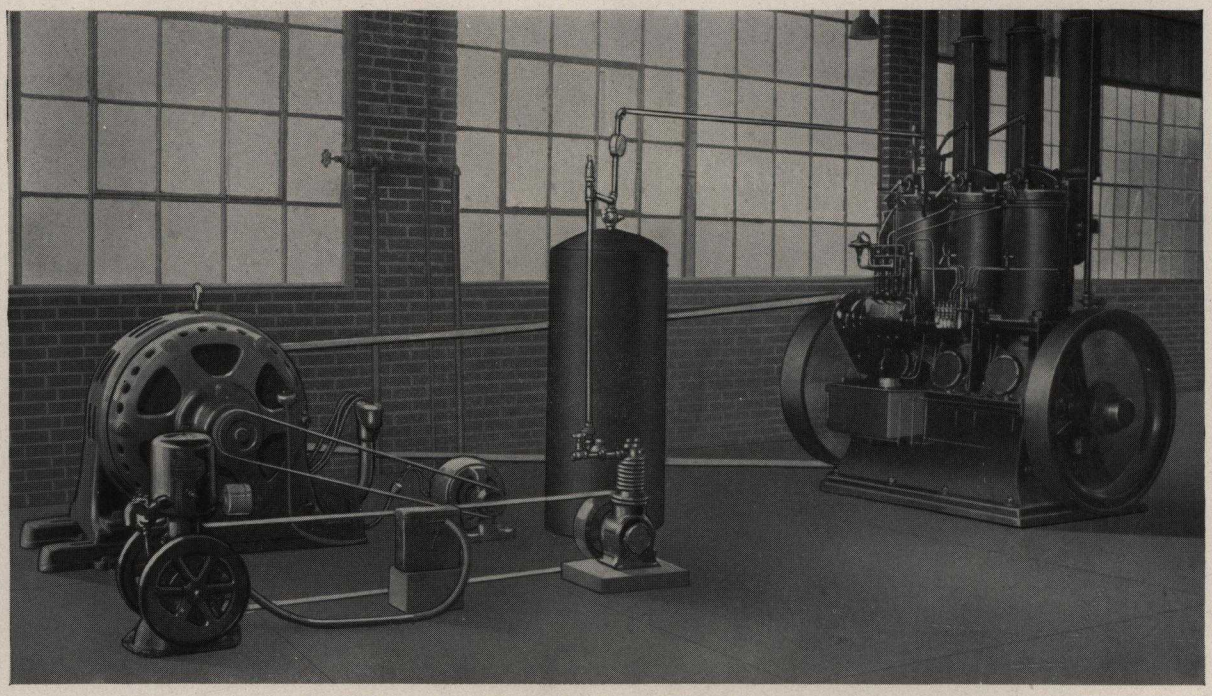
The ANDERSON OIL ENGINE is built in sizes from 15 H. P. to 300 H. P., suitable for any capacity brick plant.



Type J, 2-Cylinder 60 H. P.—Also made in 150 H. P. Type K.



SECTION SHOWING ESSENTIAL WORKING PARTS OF TYPE J (30 TO 120 H. P.)



Comparative Fuel Costs

THE question is frequently asked, "How much does it cost for fuel?" On tests we have obtained **100 H.P. for one hour with seven gallons** of 26 gravity fuel oil. Not wishing to guarantee extremes, we have inserted into our guarantee that the fuel consumption at rated load will not exceed .60 pound per B. H. P. per hour, which is approximately .64 pint or .081 gallon.

In the South the average cost for power to operate a cotton gin using steam costs from 50 cents to $1.00 per bale; with an Anderson it will cost from 7 to 8 cents per bale at the usual cost of fuel oil, **thus saving from 500 to 800%.**

Under average conditions, an Anderson will produce electricity at a fuel cost below **½ cent per K. W. H.**

When fuel oil is burned under an ordinary boiler it requires **ten to twelve times as much** of it to produce a given power as when burned in an Anderson Oil Engine.

Are You Paying for an Oil Engine in Your Fuel Bills? Stop and Figure.

Fuel Cost for 33 H.P. Used 10 Hours per Day for 300 Days

Electricity at 3 cents per K. W. hour	$2,500.00
Gasoline engine—gasoline at 20 cents per gal	2,400.00
Kerosene engine—kerosene at 10 cents per gal	1,200.00
Steam engine—coal at $4.00 per ton	1,980.00
Gas engine—gas at 75 cents per thousand cu. ft	935.00
Anderson Oil Engine—fuel oil at 5 cents per gal	**440.00**

Fuel Consumed at Various Loads

Based on oil containing 19,300 B. T. U. per pound.

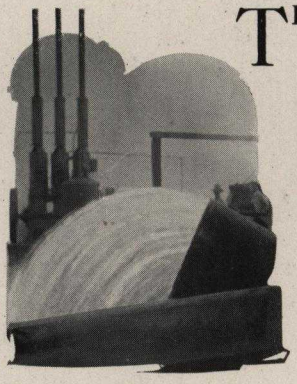
Load (per cent of engine rating)	50%	75%	100%	110%	120%	130%
Mixture (with or without water)	Dry	Dry	Dry	Wet	Wet	Wet
Tests show (pounds per B.H.P. hour)	.70	.60	.56	.53	.52	.52
Guaranteed (pounds per B.H.P. hour)	.80	.68	.60	.59	.58	.58

Note.—Fifty-nine hundredths pound equals .63 pint equals .08 gallon (approximately). If full-load fuel tests are required we reserve the right to make such tests at 30% above engine rating and to use water in the mixture at our option.

When using fuels containing non-combustible impurities it will take proportionally more pounds per H.P. Hour.

The Anderson Oil Engine

Types J and K Specifications



THE BASE is made of a strong grey iron mixture of the highest grade, very rigidly designed. It forms the lower half of the crankcase and has an **oil groove** around the bottom flange. The lower part of the base is used to **muffle the air intake** and contains no piping or other fittings; crankcase drains are tapped from the outside.

THE UPPER CRANK CASES are of the same material and are cast with large hand holes in front and rear.

THE CYLINDERS are made of a special fine-grain semi-steel mixture, accurately machined and tested; are designed to permit uniform expansion, and are water jacketed the full length of the piston travel.

THE CYLINDER HEADS are of similar material and are **water jacketed.**

THE COMBUSTION CHAMBER is made of special cast iron, **water jacketed,** with openings in the top for the spray nozzle and oil deflector.

THE PISTONS are of a special grey iron mixture, **light weight,** well braced inside and reinforced for the piston pins. They are fitted with **an oil wiper ring** at bottom and four rings at the top on type J, five on type K.

THE PISTON PINS are made of tool steel; hollow for light weight, hardened, ground, accurately fitted, and are securely held in place.

THE PISTON RINGS are **Special Patent Lap Type,** carefully fitted, **without pinning** in their grooves.

THE CONNECTING RODS are steel of the finest grade obtainable; "H" section, and **are extra long** to eliminate piston thrust. Forged on type K.

THE CRANK SHAFTS are open hearth **one-piece steel forgings,** with chemical and physical qualities that give them sufficient strength to transmit five to sixteen times the engine's rated H.P.

COUNTERWEIGHTS.—Each crank is fitted with counterweights securely attached.

THE MAIN BEARINGS are amply proportioned to withstand all strains and are lined with **genuine white metal** especially adapted to this service. Removable **babbitt-lined shells** and **chain oiler** and **air seal rings** on type K.

THE GOVERNOR.—Centrifugal enclosed type, mounted on a silent-chain-driven countershaft. It functions by shortening and lengthening the fuel injection pump strokes according to the load in such a way that it is impossible to feed more fuel than a cylinder full of air will burn.

THE FUEL INJECTION PUMPS are cast separately of **non-gran bronze;** located **close to the spray nozzles,** and each is provided with a thumb screw for adjusting the amount of fuel fed to each cylinder. A hand wheel is provided by which the **engine can be slowed to any desired speed** or stopped.

THE DEFLECTOR is used only in starting to deflect a portion of the fuel onto the igniter plug. Its stem is water jacketed and has no packing, using instead a ground seat in the combustion chamber. **It lasts indefinitely.**

THE IGNITION is accomplished by compression, assisted by a hollow steel ignition plug, automatically kept hot by the combustion inside. When pulling overloads and in emergencies a bleeder valve on the engine may be used to feed a little water into the mixture to retard the ignition; however, under ordinary conditions, the engines will pull beyond their **rated load without water in the mixture.**

THE TIME OF FUEL INJECTION can be varied by changing the position of the drive chain on the driven sprocket.

ROTATION.—The direction of rotation **can be reversed** in five minutes.

THE AIR VALVES.—Each crank case is fitted with an atmospherically operated, noiseless, leather-ring type air valve, taking its air from the sub-base. Air throttle lever provided.

FLYWHEELS.—All engines are regularly equipped with one flywheel, which should be sufficient except on single-cylinder installations and on engines doing electrical service, which are fitted with two light wheels or one special heavy wheel. On special order type J engines will be fitted with two flywheels with narrow or wide face, the latter being used for flywheel belt drive. Type K engines are designed to use only one flywheel, placed between the work and the engine. Special heavy wide face wheels used for electric service.

LUBRICATION.—The pistons and pins on both types are lubricated by a ratchet-driven mechanical oiler. On type J the cams, governors, cranks and main bearings by a positively-driven oil pump, taking its supply from an oil filter. Each crank bearing is oiled with two eccentric ring oilers. On type K the main bearings are lubricated with chain oilers, other parts by the mechanical oiler.

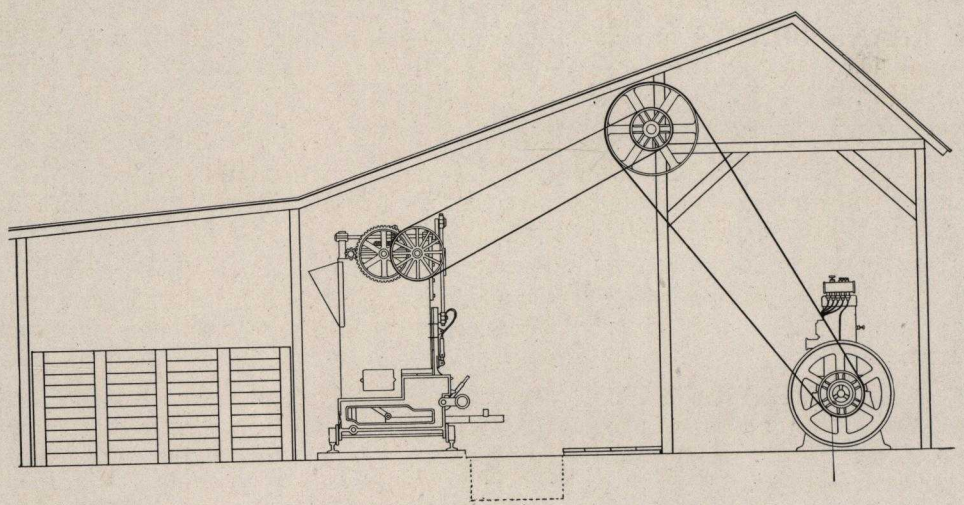
AUXILIARY FUEL TANK.—This tank has **a water jacket** for heating the fuel oil (when necessary), and is supplied with a trap and a drain cock for separating water from the fuel. Inside is a **large strainer,** easily removable for cleaning. An extra tank can be fitted for using kerosene when starting, where the regular fuel must be heated to make it flow.

COOLING SYSTEM.—On special order we furnish **a noiseless water pump** (rotary or centrifugal as specified); an auxiliary water tank; a thermometer for each cylinder, and the necessary pipe and fittings.

FINISH.—All unfinished surfaces are ground smooth, filled and rubbed down, and painted with two coats of dark green **oil-resisting enamel.**

STARTING.—On special order a complete air-starting outfit, consisting of a gasoline engine, air compressor, air storage tank and all necessary pipe and fittings, will be furnished.

Note.—We reserve the right at all times to make any changes in details of Anderson engines or equipment that will, in our judgment, constitute an improvement.



ILLUSTRATING AN OIL ENGINE DRIVING A BRICK PLANT

Manufactured by

ANDERSON FOUNDRY & MACHINE CO.

Anderson, Ind., U. S. A.

***Complete Engine Catalog Upon Request*—15, 30, 60, 90, 120, 150, 225 and 300 H. P.**

OIL BURNING EQUIPMENT

Chicago Brick Machinery Co.

2825 West Harrison Street

CHICAGO

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

OIL BURNING EQUIPMENT

WHENEVER it can be clearly shown to a man in any line of manufacture that a change in his processes, or the installation of new equipment, will make either a marked saving in his cost of manufacture or a noticeable improvement in the quality of his product, the matter is one that is worthy of his serious consideration; and when both a saving and an improvement can be clearly shown, a practical man will not fail to look into the subject thoroughly and carefully.

On these grounds we ask every practical and progressive clay worker to consider carefully the advantage of burning clay wares with oil instead of with coal or wood. A proper and complete equipment for burning clay wares with oil insures at least two strongly marked savings—a large saving in labor and a large saving in the time of burning; and in addition there is in every case a very noticeable improvement in the product.

In many cases there is also a third saving in the actual cost of the fuel used. This depends, of course, on the comparative cost of coal and oil in different sections of the country.

In addition to these savings there is another advantage that will strongly appeal to many, which is that with our outfits, which perfectly control, properly atomize and fully burn the oil, there is absolutely no smoke produced. This is a great advantage where a plant is located near the business or residence district of a city.

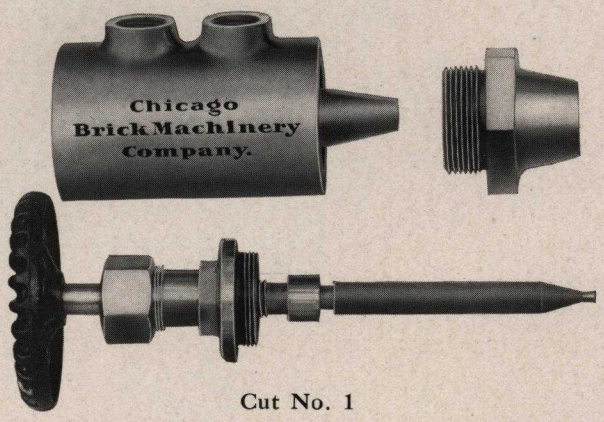
Many clay workers are waking up to the fact that oil is a splendid fuel to use, which is clearly shown by the number of yards changing to this method of burning their clay wares. This extensive use of oil as a fuel among clay workers is not due primarily to a shortage of coal, but is due to the many beneficial results of oil burning, which have been fully demonstrated during the past few years. In addition to the advantages already mentioned above, we call your attention to other advantages of oil as follows:

1—Saving in freight charges.
2—Requires less storage space.
3—Higher heating value.
4—Improved combustion and no ash.
5—Absolute control over fires.
6—Improved working conditions.
7—Adapted to any type of kiln.

We have been identified with the clay-working trade for the past 30 years and were one of the first to advocate the use of oil for burning clay wares, thereby resulting in the installation of our equipment on many yards. On the following pages we describe the mechanism of our burners, strainers, heaters, etc.

The function of any burner is to atomize or finely divide the oil, so that the oil particles will present the maximum of surface for contact with the air required for combustion.

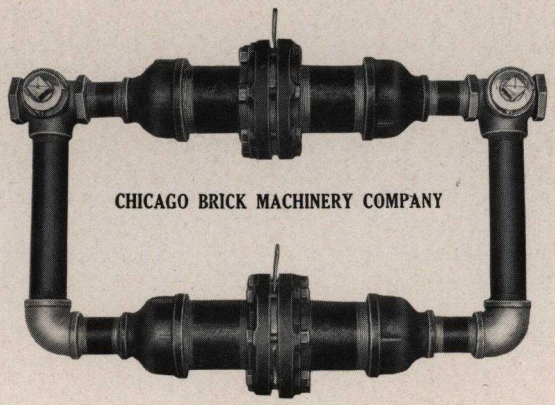
The *No. 4 Oil Burner,* which can be used for gravity or pressure systems, is recognized in many localities as the most efficient atomizer being offered to the clay-working trade. It was designed by a practical superintendent on one of the large Chicago yards. The success of the *No. 4 Oil Burner* on this yard was so gratifying that it is now used by all the other Chicago yards.



Cut No. 1

You will notice in Cut No. 1 the construction of this burner is very simple, there being no weak or fool parts to get out of order. All wearing parts are made of brass of proper proportions to give long service. The needle valve is finished, so that it fits the casing perfectly, and with the addition of a guiding ring at the rear of the casing it is held in a central position at all times. By this arrangement it is impossible for the needle to get out of line. The flame is always even with the center of the atomizer, and in this respect is different from the ordinary atomizer, where the flame often goes on one side. The threading on the needle is very fine, this permitting close regulation.

In burning fuel or crude oil, it is absolutely necessary to strain the oil in order to eliminate any refuse or foreign matter that would have a tendency to clog the burners. Our Duplex Oil Strainer shown in Cut No. 2 is located in the oil suction line. It is designed to have ample capacity for any size brick kiln. The oil is by-passed to second strainer as shown in cut. The cleaning is quickly done. When one strainer side is being cleaned the other side is in operation, obviating any shutdown.



Cut No. 2

The strainer is made by casting a lead gasket on each side of the copper wire screen, then trimming the lead faces, so as to make a perfect fitting gasket for the flanges. Should it be necessary to clean the strainer while burning a kiln of brick, this is easily accomplished by turning the 3-way valves, thus by-passing the flow of oil to the other strainer, then loosening the bolts of the flange and removing the gasket screen. The screen can be cleaned by blowing it with steam or any other method that may suggest itself.

For effective atomization of fuel oil, the viscosity must be reduced by heating. As the flash point varies considerably in the different grades of fuel oil, it would be well for the purchaser to know the flash point of the oil he is using. He should specify, in purchasing, that the oil will attain proper viscosity at a temperature below the flash point.

With our heater, which has been specially designed, it is possible to know at all times the temperature of the oil. The heater is a cylinder flanged on one end and capped on the other. The oil passes through the piping inside of the cylinder, where it is heated by either live or exhaust steam. A thermometer is placed at the oil outlet to record the temperature.

Generally the gravity system is the best and cheapest for brick yards, and our standard plan of installation would in most cases prove satisfactory, but in order to furnish the equipment which will give best results, we should have full details regarding local conditions. Therefore, if you are interested in oil burning equipment, and will send us a rough sketch showing layout of yard, including number and location of kilns with distances, number of fire boxes, also switch track, it will enable us to go over your proposition more intelligently and submit a proposal on the necessary equipment.

Our standard connection of burners at the fire boxes is ideal for best results. An extension is provided at each fire box of loose fire brick, which can be easily adjusted to admit the necessary air for proper combustion. The oil and steam supply pipes are tapped, to which are attached the necessary pipe saddles, nipples, fittings and valves.

We are prepared to furnish complete systems, either gravity or pressure, including, if desired, the storage tanks. If it is more desirable to construct a concrete or brick storage cistern, we have full details and prints, which we will furnish to purchasers of our equipment. If you are not interested in a complete equipment, possibly our *No. 4 Oil Burner* will appeal to you, as it is the very best made for brick yard use. We will gladly send you one of these burners on request, so you can examine it carefully, and if you can conveniently do so, try it out in regular work.

Most manufacturers are on the lookout to reduce costs wherever possible, and in no department of clay manufacturing is there a better opportunity to make a saving than in the burning. Undoubtedly some plants, which are not now paying dividends, could do so if a *substantial saving* was made in burning costs. Our experience has taught us by burning with oil a *substantial saving* is accomplished and a vastly improved product is secured. Therefore, why not install our oil burning equipment now and increase your profits at once?

Chicago Brick Machinery Co.

2825 West Harrison Street

CHICAGO

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